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ABSTRACTS

FIBERS A

ELECTRON-MICROSCOPIC INVESTIGATIONS OF THE FINE STRUCTURE OF TEXTILE FIBERS [REVIEW]. O. Wälchli. Schweiz. Arch. Angew. Wiss. u. Tech. 26: 191-199 (1960). Through Chem. Abstr. 54, No. 19: 20214f (1960). (392)

DYNAMICS OF SYNTHETIC FIBERS. J. Boque. Rayonne et Fibres Synthet. No. 8: 857-860 (1960). In French. Through BCIRA 40: 4421 (1960).
The consumption of synthetic fibers during the period 1949-1958 is compared with that of cotton to show their increasing popularity both in the clothing industry and in the technical field. (393)

NUCLEAR MAGNETIC RESONANCE OF WATER SORBED ON FIBROUS MATERIALS. T. M. Shaw, R. H. Elsken, and R. E. Lundin (Western Reg. Research Lab.). J. Textile Inst. 51: T562-T572 (Dec. 1960).
The purpose of this paper is to present some results obtained by an application of the methods of nuclear magnetic resonance (NMR) to the investigation of the sorption of water by wool, silk, nylon, and some related materials. The results suggest that the water is bound in clusters to the sorbent, and that surface migration is the dominant mode of magnetic relaxation. 23 refs. (394)

STUDIES OF THE SURFACE GEOMETRY OF FIBERS. PART 1. PRELIMINARY EXPERIMENTS. W. J. Lyons (Textile Research Inst.). Textile Research J. 30: 955-958 (Dec. 1960).
The background for a study of surface geometry, among other surface properties of fibers, is briefly surveyed. By the adaptation of an instrument designed for measurements in the metals industry, exploratory trials were conducted on specimens of a number of fiber types. Only ranges of readings of "arithmetic average roughness," rather than discrete values, were obtainable, but these results were promising in showing that widely different fiber types--viscose rayon, wool, and raw silk--occupied distinct levels. 7 refs. (395)

Natural fibers A1

COMPOSITION OF SUINT. F. O. Howitt and R. Preston (Wool Inds. Research Assoc.). J. Textile Inst. 51: T841-T856 (Dec. 1960).
Quantitative analysis, mainly by chromatographic methods, of suint extracts from raw wool has shown not only substances the presence of which has been previously established, but also new compounds such as the keto-acids. The origin of suint constituents is discussed, and the view is advanced that most of them are not true catabolites of the sheep, but are the products of microfloral metabolism in the fleece. 24 refs. (396)

EFFECTS OF FIBER DIAMETER AND CRIMP ON PROPERTIES OF WOOL FABRICS AND OTHER FIBER ASSEMBLIES. PART 1. INTRODUCTION. J. Menkart and N. F. Roberts (Textile Research Inst. & C.S.I.R.O.). J. Textile Inst. 51: T1438-T1442 (Dec. 1960).
A description is given of the selection and properties in the greasy state of six wools, varying in diameter, crimp, and length. The levels of these three parameters are discussed with the success in achieving them at the greasy-wool stage. 3 refs. (397)

EFFECTS OF FIBER DIAMETER AND CRIMP ON PROPERTIES OF WOOL FABRICS AND OTHER FIBER ASSEMBLIES. PART 2. PROPERTIES OF TOP, ROVING, YARN, AND FABRIC. J. H. Dusenbury and C. J. Dansizer (Textile Research Inst.). J. Textile Inst. 51: T1443-T1461 (Dec. 1960).
The wools described in Part 1 (see abstr. 397/61) were processed on the French-worsted system, and the yarns were woven into fabric. With top and roving, fiber crimp appears to be the most important factor in explaining the behavior of the fiber assemblies. The mechanical behavior of yarn reflects the behavior of the constituent fibers beyond the uncrimping region of the fiber load-extension curve, crimp entering the picture indirectly. Both fiber diameter and crimp enter the picture when the bulk-compression properties of the yarns are considered. Diameter and crimp often appear to be of relatively equal importance in their relationship to fabric properties. 18 refs. (398)

CONSTITUTION OF SUINT. PART 3. COLORING MATTER. I. E. B. Fraser and E. V. Truter (Leeds Univ.). J. Textile Inst. 51: T863-T875 (Dec. 1960).
A partial formulation of the characteristic coloring matter of suint from normal sheep is presented. The fundamental molecular unit is methyl 10-(2,5-dihydroxyphenyl)-decanoic acid, and this is associated, usually nonstoichiometrically, with a nitrogenous β-diketone. 16 refs. (399)

TENDERNESS IN FLEECE WOOL. N. F. Roberts, J. F. P. James, and V. D. Burgmann (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T935-T952 (Dec. 1960).
This paper presents a study of appraisal practice to establish the significance of the classification "tender" in terms of strength loss, and the price penalty entailed by tenderness. Information on the origin and nature of tenderness is reviewed. 29 refs. (400)

FIBERS TODAY. PART 8. VEGETABLE FIBERS. J. W. S. Hearle. Textile Mfr. 86: 481-487 (Dec. 1960).
The author discusses the classification of commercial vegetable fibers, the physical properties of jute, flax, ramie, soft hemp, coir and sisal, processing techniques, and range of uses. (401)

ANOMALOUS STAPLE CRIMP: ITS SIGNIFICANCE IN WORSTED PROCESSING. W. R. Lang and R. B. Sweetten (Gordon Inst. Technol.). J. Textile Inst. 51: T922-T934 (Dec. 1960).
Normal (N) and Anomalous or Doggy (D) wool from 4 different non-Peppin flocks have been processed on the worsted system to determine whether there are any physical or technological differences in processing between the two types. In worsted spinning under similar conditions, the N batches spun more efficiently than the D at high counts, but, in the commercial count range, the D batches performed adequately and were very little different from the corresponding N batches. In physical and subjective tests on yarns and fabrics where there was a difference between the normal and doggy wools, the results usually, but not always, tended to favor the normal wool. 6 refs. (402)

MECHANICAL PROPERTIES OF SET WOOL FIBERS AND THE STRUCTURE OF KERATIN. M. Feughelman (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T589-T602 (Dec. 1960).
The author has carried out a detailed study of the mechanical properties of single fibers, after boiling in distilled water for various times and strains, followed by relaxation under varying conditions. The results are interpreted in terms of the structure of keratin. 17 refs. (403)

TECHNOLOGICAL CIRCULARS ON TRADE VARIETIES OF PAKISTANI COTTONS (1959-60). NOS. 1-13. Pakistan Inst. of Cotton Research & Technology. Pakistan Central Cotton Comm., New Queens Road, Karachi 1, Pakistan. Sept. 1960. 26 p.
Fiber and spinning test data. (404)

SEARCH FOR NEW FIBER CROPS. PART 2. ANALYTICAL EVALUATIONS (continued). H. J. Nieschlag, F. R. Earle, G. H. Nelson, and R. E. Perdue, Jr. Tappi 43: 993-998 (Dec. 1960).
In a continuing search for plants that have potential as sources of raw material for papermaking, data are reported for 122 additional species in 22 plant families. Data include chemical analyses, cellular dimensions, densities, and chlorite-maceration yields of these plant stalks. See abstr. 1297/60 for Part 1. 12 refs. (405)

ACTION OF HEAT ON WOOL. J. W. Bell, D. Clegg, and C. S. Whewell (Leeds Univ.). J. Textile Inst. 51: T1173-T1182 (Dec. 1960).
In the present work, attention was concentrated upon the changes taking place at a temperature (200° C) at which scorching took place readily. Some of the chemical and physical changes which result from heating under these conditions have been assessed quantitatively, and to obtain information on the mechanism of the reactions involved, a study has been made of the changes which take place when certain chemically modified wools are heated under similar conditions and when the heating is carried out in absence of air. 27 refs. (406)

STUDY OF MOLECULAR STRUCTURE OF FIBERS. G. N. Ramachandran and V. Sasisekharan (Univ. Madras). J. Sci. Ind. Research (India) 19: 488-493 (Oct. 1960).
Present knowledge on the structures of simple polymers, inorganic fibers, polysaccharides, proteins, polypeptides collagen, polyimino acids, nucleic acids, and polynucleotides is reviewed. For Part 1 see abstr. 4239/60. 63 refs. (407)

Manmade fibers A2

NOTE ON THE DETERMINATION OF WAX CONTENT OF PAKISTANI COTTONS BY EXTRACTION WITH PETROLEUM ETHER. A. Ahmed and E. Khan (Pakistan Inst. Cotton Research & Technol.). Pakistan Cottons 5: 39-40 (Oct. 1960). (408)

MANMADE FIBERS: SOME RECENT DEVELOPMENTS. PART 2. A. J. Hall. Fibres and Plastics 21: 355-357, 368 (Dec. 1960).
Progress in the modification of polyamide and polyester fibers, particularly the use of durene and piperazine derivatives for polyamide production and polyesteramide fibers, are discussed. Recently developed techniques to overcome the problems of static electricity and pilling are also described. 10 refs. (409)

SYNTHETIC FIBERS IN EUROPE. Chem. Eng. News 38: 96-106, 120 (Dec. 5, 1960).
The European manufacturing and marketing situation for polyamide, polyester, and acrylic fibers is surveyed. (410)

CHITIN FIBERS AND CHITOSAN PRINTING. B. C. Ming. Faserforsch. u. Textiltech. 11, No. 7: 320-326 (1960). In German. Through BCIRA 40: 4175 (1960).
Preparation of chitin and chitosan, spinning of chitosan fiber by coagulating it in the spinning bath and drawing to long filaments in hot glycerine (100-120° C) to 250%, preparation and ion-exchange properties of semi-hydrolyzed chitin fiber, and the use of chitosan as binder in dyeing and printing of textiles are discussed. A table is given listing various cationic, anionic, and amphoteric ion-exchange fibers. 28 refs. (411)

SYNTHETIC TEXTILE FIBERS. PART 1. M. van Overbeke. Teintex 25, No. 9: 611-631 (1960). In French. Through BCIRA 40: 4165 (1960).
In this review, the author discusses the techniques of producing linear macromolecules (polymerization, polycondensation, polyaddition), the production of polymerizates and polycondensates, the production of fibers, and the future of synthetic fibers. (412)

CUPRAMMONIUM RAYON AND FILM FROM GROUNDNUT HUSK CELLULOSE. R. S. Govil. Textil-Rundschau 15, No. 9: 485-486 (1960). In German. Through BCIRA 40: 4162 (1960).
The method for preparing the cuprammonium cellulose solution, spinning, preparation of the film, and methods for testing the yarn are described, and reasons for the low quality of the yarn are pointed out. (413)

INTRODUCTION TO TEXTILE PROPERTIES OF CORVAL AND MOYNEL FIBERS. A. F. Cheatham (Courtaulds, Inc.). Can. Textile J. 77: 55-62 (Dec. 23, 1960).
Properties of Topel and Corval crosslinked cellulose fibers and Moynel high wet modulus cellulose fibers are described. Data on the processing of these fibers on the cotton system are presented. (414)

VISCOSE RAYON TOW SPINNING. A. Bornyiec. Man-Made Textiles 38: 32-34 (Jan. 1961).
Report on a new Polish tow spinning system which utilizes an air-tight construction to make possible the recovery of spinning gases and improved atmospheric conditions in the spinning plant. (415)

NEW POLYPROPYLENE FIBER MERAKLON. Riv. Tessile No. 8: 819-821 (1960). In Italian. Through BCIRA 40: 4173 (1960).
The development of artificial and synthetic fibers by the Montecatini Co. is reviewed, with special reference to the polypropylene fiber Meraklon which has approximately the same technical properties as other synthetic fibers but can be produced at much lower costs and has the lowest density of all existing fibers so that it floats on water. Owing to these two characteristics, the new fiber can advantageously compete with other fibers, both natural and synthetic. (416)

TECHNICAL DEVELOPMENTS IN 1960: MANMADE FIBERS. Textile Weekly 60 (2): 1509-1513 (Dec. 23, 1960). (417)

MANUFACTURE AND DYEING OF POLYAMIDE FIBERS. PART 2. R. S. Asquith and G. E. Styan. Fibres and Plastics 21: 365-368 (Dec. 1960).
The raw materials from which the various commercial types of polyamide fibers are produced, the chemical and physical properties of the fibers, and improved spinning methods are described. A list of trade names denoting the chemical nature of the fibers is included. 9 refs. (418)

MICROSCOPIC SWELLING STUDIES ON POLYAMIDE FIBERS EXPOSED TO PHYSICAL AND CHEMICAL FACTORS. W. Bobeth. Faserforsch. u. Textiltech. 11, No. 7: 305-311 (1960). In German. Through BCIRA 40: 4351 (1960).
Swelling studies in sulfuric acid under the microscope (abstr. 1307/60) on mechanically-stressed polyamide fibers showed that heat, ultraviolet radiation, dyes, bleaching, and chemicals affect the swelling time of the fibers differently and, although the photomicrographs frequently show typical differences, an extensive systematic study must be made before they can be used for special identification purposes. (419)

YARN PRODUCTION B

FLOCK PREPARATION. Vertipile, Inc. Am. Textile Reptr. 75: 13, 43 (Jan. 19, 1961).
Step by step description of the preparation of random-length flock cut from white cotton clips using a battery of Robinson knife cutters. (420)

SLIVER TO YARN SPINNING. N. Hooper (Tweedales & Smalley Ltd). Textile Mfr. 86: 478-480, 494 (Dec. 1960).
The theory of the Tweedales and Smalley direct sliver to yarn spinning system, the factors leading to its development, and machine features are covered. (421)

A BRAND NEW HIGH IN MECHANIZED SPINNING. Toyo Spinning Co. Textile World 111: 58-62 (Jan. 1961).
Picture and word description of a new Japanese automated spinning system which integrates seven processing steps into one straight-line operation. Included are data on yarn properties and plant operation. (422)

WASTES: WHEN AND HOW THEY ARE MADE. S. M. Marfatia. Textile Dig. 19: 89-93 (Apr.-June 1958).
The various categories of cotton waste and their sources are described, and factors affecting waste production, as well as suggested control methods, are discussed. (423)

DEVELOPMENTS IN SPINNING MACHINERY. R. Cheetham (T. M. M. (Research) Ltd). Textile Weekly 60 (2): 1369-1370 (Dec. 9, 1960).
Factors limiting production at the ring frame are discussed. (424)

TRENDS IN THE MECHANICAL DESIGNS OF YARN PREPARATORY MACHINERY. R. A. Hudson (Saco-Lowell Research & Develop. Center). Proc. So. Textile Methods Standards Assoc.: 8-17 (Fall 1959/Spring 1960).
The three basic objectives in new machine design (improved quality, reduced cost, good appearance) and recent trends aimed at fulfilling them are discussed. (425)

SPINNING OF DELFION, ALONE AND IN BLENDS WITH OTHER FIBERS, ON THE COTTON SYSTEM. G. Secchi. Riv. Tessile 36, No. 7: 695-699 (1960). In Italian. Through BCIRA 40: 4211 (1960).
Processing of Delfion polyamide fiber alone (opening, carding, drafting, spinnability) and its spinning in blends with viscose or cotton fibers are discussed, and the properties and advantages of the yarn obtained are outlined. (426)

STUFFER CRIMPED TEXTURED YARNS. K. Kawasaki. J. Soc. Textile Cellulose Inds. Japan 16, No. 9: 773-778 (1960). In Japanese. Through BCIRA 40: 4217 (1960).
Bulked yarns of different types are classified and compared, and stuffing apparatus (Japanese patents) is described and illustrated. (427)

Opening, picking, fiber preparation B1

RAW MATERIAL BLENDS WITH CHEMICAL FIBERS. K. Müller. Chemiefasern 10, No. 9: 579-580 (1960). In German. Through BCIRA 40: 4455 (1960).
Reference is made to the Temafa-willow for the preparation of fiber blends, which ensures thorough mixing and careful opening of the more or less compressed and lumpy materials without adversely affecting their structure. (428)

OPTIMUM SETTING FOR UPRIGHT LATTICE COTTON OPENERS. I. Röder. Magyar Textiltech. 11, No. 11: 436-439 (1959). In Hungarian. Through BCIRA 40: 4454 (1960).
A method of improving the operation of existing machines consists of: (1) setting the shortest possible distance between the spike points of the upright lattice and regulating roller on the bale breaker and the upright lattice opener at the beginning of the line; (2) setting the most advantageous speed of the regulating roller; (3) setting a higher speed for the upright lattice; and (4) maintaining the content of the hopper at 3/4 capacity. (429)

Carding and combing B2

EXPERIMENTAL STUDY OF WOOL COMBING. E. Dyson and F. Happey (Bradford Inst. Technol.). J. Textile Inst. 51: T1016-T1029 (Dec. 1960).
A brief review of an experimental study of the effects of variations in combing procedure on the physical properties of worsted yarns is given. Because of the results obtained, a study was made of the fiber-length distribution in the uncombed and combed materials. A discussion of the findings concludes the paper. 5 refs. (430)

RECENT RESEARCHES IN WOOL COMBING. R. Bownass (Wool Inds. Research Assoc.). J. Textile Inst. 51: T1035-T1047 (Dec. 1960).
Data from investigations on a study of the combing performance of skin wools, a study of the effect of lubrication on worsted carding, assessment of breakage associated with the Noble comb, and a study of the feed of the Noble comb are recorded. 3 refs. (431)

INFLUENCE OF FEED IN NOBLE COMBING. D. S. Taylor and G. W. Walls. J. Textile Inst. 51: T1002-T1015 (Dec. 1960).
It is shown that combing rate is very sensitive to changes in setover and insensitive to changes in tear. Tear, of a given wool, depends not only on the setover, but also on the pull-through; typical values of the latter are given and its variation with setover, punch sliver weight and type of wool investigated. Changes in top fiber length and tear are examined for different lengths of noil removed and it is shown that, though the tear may change considerably, there is only a small change in fiber-length distribution in the top. The use of higher punch sliver weights is shown to be advantageous since, at constant input, less noil is lost while, at constant setover, higher production is obtained without change of noil loss. In either case, there is very little difference in the properties of the top. 12 refs. (432)

DISTRIBUTION OF FIBERS ON A WOOLEN CARD. P. D. Jowett and R. T. D. Richards (Wool Inds. Research Assoc.). J. Textile Inst. 51: T894-T906 (Dec. 1960).
The loading and distribution of fibers on the rollers of a woolen card have been estimated for various machine settings. 5 refs. (433)

EFFECT OF STAPLE STRENGTH ON CARDING AND COMBING. D. A. Ross, R. L. Bratt, and L. F. Story (New Zealand Wool Inds. Research Inst.). J. Textile Inst. 51: T907-T921 (Dec. 1960).
A trial was carried out on the effect of various levels of staple strength on the manufacturing performance, up to tops, of 48/50s New Zealand Romney crossbred wool. The sounder wools gave the highest Noble combing tears, less fiber breakage in carding and combing, and longer squarer tops. The effect of very short fiber on the measurement of mean fiber length and, consequently, on the estimation of fiber breakage is discussed. 12 refs. (434)

INTERMEDIATE GILLING OPERATIONS. H. Needham and W. Parkin. Wool Rev. 34: 22-23 (Nov. 1960).
The main objects of intermediate gilling are noted, and the effect on these of the number of intermediate gilling operations, the use of an intersector type gill box, the use of ball or can delivery arrangements, drafts and doublings employed, and the use of an autoleveller type gill box is examined. 4 refs. (435)

SIZE-DISTRIBUTIONS AND CONSTITUTION OF NEPS IN COMBED WORSTED SLIVERS. S. L. Anderson and R. Stubbs (Wool Inds. Research Assoc.). J. Textile Inst. 51: T1048-T1057 (Dec. 1960).
The distribution of nep core weights for three combed worsted slivers was found to be closely represented by a negative exponential relation. An average threshold value of nep size for a group of technical people was found to be about 0.05 mm. The fiber length distribution of neps was determined in relation to that of the parent sliver and found to be not inconsistent with severe breakage (proportional to fiber length) after nep formation. Recommendations for making nep counts are included. 7 refs. (436)

CARD ROOM QUALITY--THE KEY TO GOOD STANDARDS. W. A. Thomason (Thomason Textile Service). Proc. So. Textile Methods Standards Assoc.: 37-39 (Fall 1960).
The effect of card room quality on standards of yarn quality, processing efficiency, job assignments, production costs, and machinery performance is discussed. (437)

CARDING OF COTTON. L. Delplanque. Industrie Textile: 519-539 (July/Aug. 1960). In French. Through BCIRA 40: 4457 (1960).
In this review, the author discusses: the operations preparatory to carding and their importance; historical development, mechanism, and main components of the card; optimum working conditions; effect of mechanical factors on the carding efficiency; progress made in various countries; and future of carding in cotton spinning mills. 55 refs. (438)

FACTORS AFFECTING THE CLEARANCE OF A SWIFT IN WOOLEN AND WORSTED CARDING. P. P. Townend and others. J. Textile Inst. 51: T968-T985 (Dec. 1960).
This paper is a factual report of work carried out to assess some of the factors affecting the buildup in the swift of a woolen and worsted card. Those considered were the density and angle of bend of the swift and doffer clothing, the effect of the angle of inclination of the fancy wire, the presence of bend in the wire, surface speed relative to the swift, depth of penetration and type of foundation used for the fancy clothing. 7 refs. (439)

CALCULATION OF A MAK WASTE CARD WITH AND WITHOUT VARIABLE SPEED GEAR FOR THE WORKER ROLLERS AND FANCY. B. Kägi. Z. ges. Textil-Ind. 62, No. 19: 825-832 (1960). In German. Through BCIRA 40: 4202 (1960).
Calculation of the variable speed gear for various components of the card is carried out to show the effect at the adjustable drive (for the working roller group and the fancy) on the opening and carding efficiency. (440)

METHOD OF CONSTRUCTING SLIVERS OF PARALLEL FIBERS. D. S. Taylor and G. W. Walls (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T986-T998 (Dec. 1960).
Consideration of the problem of producing tops from scoured wool suggests the need for a system of alignment of fiber locks prior to sliver formation. A theory of alignment using a faller mechanism is developed and shown to be qualitatively correct on an apparatus which has considerable advantages compared with the card, the more important of these being increased yield of top (about 2-1/2% on scoured wool weight) and improved top with higher mean fiber length and less nep. 7 refs. (441)

EFFECT OF A CARD SLIVER EQUALIZATION DEVICE ON THE IRREGULARITY OF COTTON YARNS AND FABRICS. W. Wegener and H. Peuker. Z. ges. Textil-Ind. 62, No. 17: 711-715; No. 19: 821-824 (1960). In German. Through BCIRA 40: 4205 (1960).
The authors examine the effect of automatic sliver equalization devices on the irregularity of fiber mass distribution, with a view to ascertaining whether the use of these devices gives improved regularity of the yarn and the fabric produced from it. The spinning plan, length variation, spectrograms, reproducibility of tests, cross-sectional area variations, fabric appearance, and strength, elongation and twist are discussed in particular. (442)

REMOVAL OF VEGETABLE MATTER. W. V. Morgan. J. Textile Inst. 51: T998-T1001 (Dec. 1960).
A machine has been constructed with an oscillating burr beater axis to remove vegetable matter from wool as delivered from the sliver converter. (443)

Drawing and roving B3

FIBER LENGTH DISTRIBUTION IN ROVING FROM CARDED YARN IN WOOLEN SPINNING MILLS. E. Boroczy. Faserforsch. u. Textiltech. 11, No. 7: 334-342 (1960). In German. Through BCIRA 40: 4208 (1960).
In order to supplement the Monfort exponential function, a parabolic function (A-function) was found for the distribution of fibers in carded rovings, by means of which it is possible to draw conclusions as to the fiber shortening caused by carding or to evaluate it from the difference of the exponents before and after carding. The proposed function was tested on various rovings, especially those with viscose staple fiber admixtures. (444)

OPTIMA ROVING REGULATING DEVICE. E. Schenkel and A. Drescher. Textil-Praxis 15, No. 9: 884-891 (1960). In German. Through BCIRA 40: 4462 (1960).
The first experiments on the Optima device showed measurable regularity improvement throughout the whole spinning process, which is expressed in the quality of the respective product. The experiments were carried out on one cotton quality only. The effect of the wear of the regulating elements on the efficiency of the device cannot be evaluated yet. (445)

CONTROL OF DRAFTING BY TWIST. D. T. Liddy and E. F. Denby (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T1109-T1119 (Dec. 1960).
A yarn may be drafted from a large mass of fibers by using twist to supply the nip force to select fiber leading ends. An account is given of an experimental machine using this principle in which withdrawal tension in the yarn was used to control the amount of twist being inserted. The coefficients of variation of the mass per unit length of a series of yarns produced by this machine are compared with a minimum value calculated assuming perfect operation. Some possible reasons for the shortcomings in levelness are discussed. Experiments in which the forces necessary to extract single fibers and groups of fibers from large masses are described, and their relevance to tension control of twist is discussed. 4 refs. (446)

RAPER AUTOLEVELER GILL BOX: CHECKING, TESTING, AND QUALITY CONTROL. PART 1. Textile Recorder 78: 48-50 (Jan. 1961).
In this article the checking, testing, and adjustment of the Raper autoleveler gill box are discussed from the viewpoint of understanding, maintaining, and possibly improving the quality of the material produced. (447)

STUDY OF THE OPERATION OF A NEW AUTOLEVELER SYSTEM: H.M.G. IN THE PREPARATION BEFORE COMBING. J. Grignet and F. Monfort (Peltzer et Fils). J. Textile Inst. 51: T1058-T1073 (Dec. 1960).
This paper deals with the Hanseatische Motoren Gesellschaft autoleveler used as a preparer gill-box before combing. It includes a discussion of the theoretical principles of autoleveler devices and a detailed examination of the H.M.G. system, of its effect on the product passing through it, and of possible defects in its operation. (448)

DISTRIBUTION OF VELOCITY-CHANGE-POINTS IN ROLLER DRAFTING. PART 6. EFFECTS OF CONTROL APPARATUS (3 OVER 4 SYSTEM). T. Ichino, S. Kurosaki, and F. Konda. J. Soc. Textile Cellulose Inds. Japan 16, No. 9: 750-752 (1960). In Japanese (English summary). Through BCIRA 40: 4206 (1960).
The properties of velocity-change-points for different clearances between the back roller and the smooth roller were studied. (449)

TWO RIETER INNOVATIONS. Rieter Mach. Works Ltd. Swiss Tech. No. 3: 41 (1960).
Features of the Rieter DO high-speed drawing frame and the Hebucofil suction clearing system for ring spinning frames are briefly described. (450)

Spinning, winding, twisting B4

TENSILE BEHAVIOR OF SLUBBINGS DURING SPINDLE DRAFTING. B. Hogley and J. G. Martindale (Scottish Woollen Tech. Coll.). J. Textile Inst. 51: T1074-T1088 (Dec. 1960).
This investigation was carried out to supplement the insufficient information available on the operation of single spindle drafting on the woolen mule. Slubbings ranging from a long coarse rug wool to a short mungo blend and from all-wool to blends of wool and manmade fibers were tested for tensile behavior on a single spindle-drafting apparatus. Some tests were also done on waste silk and waste cotton and cotton and worsted rovings. 3 refs. (451)

DRAFTING DURING SPINNING. R. Audivert. Investigacion e Informacion Textil 3, No. 2: 115-147 (1960). In Spanish. Through BCIRA 40: 4207 (1960).
In this review the author discusses the general drafting theory, various drafting systems (Ambler, Versatex, Casablancas, and Balmes), factors affecting the irregularity of the product obtained, and draft distribution in other machines (preparatory machines). 32 refs. (452)

ICT-1 TYPE HIGH DRAFT SYSTEM FOR RING SPINNING MACHINES. N. Florescu. Industria Textila 11, No. 7: 254-256 (1960). In Rumanian. Through BCIRA 40: 4464 (1960).
The experiments described were carried out on a Marzolli ring spinning machine with 420 spindles, fitted with the high draft system. Good results were obtained under mill conditions at drafts up to 30. (453)

SPINNING ENDS DOWN PER 1000 SPINDLE HOURS CAN BE DETERMINED THROUGH STATISTICAL MEASUREMENT. R. W. Malone (Riegel Textiles Corp.). Proc. So. Textile Methods Standards Assoc.: 1-7 (Fall 1959/Spring 1960). (454)

INVESTIGATION INTO THE STATE OF A WORSTED YARN AT AN END-BREAK. J. Adamson, C. Casswell, J. Ingham, and J. B. Sharp (Wool Inds. Research Assoc.). J. Textile Inst. 51: T1131-T1146 (Dec. 1960).
During the cap spinning of a worsted yarn, observations have been made on the physical state of the yarn at the instant of an end-break. The values of yarn tension and thickness, and of drafting force and roving thickness, have been measured corresponding to an end-break. It has been concluded that the yarn breaks primarily because of the existence of a thin place generated during the spinning draft, and that the fibers slip rather than break when a spinning end-break occurs. 2 refs. (455)

INVESTIGATIONS IN WOOLEN RING SPINNING. R. L. Bratt (New Zealand Wool Inds. Research Inst.). J. Textile Inst. 51: T1089-T1108 (Dec. 1960).
Practical studies on the effects of draft and false twist, different dyeings, and oil content on woolen ring spinning performance are reported. 20 refs. (456)

ECONOMICS OF MODERN RING SPINNING. K. P. Norris (Brit. Cotton Ind. Research Assoc.). Textile Merc. 144: 11, 13 (Jan. 6, 1961).
On the basis of a Shirley Institute survey, the outstanding feature of the modern ring frame, from the point of view of production economics, is the high level of capital cost, relative to operating cost. The implications of shift working and bobbin size in relation to capital costs are discussed. (457)

DAVIS & FURBER MODEL H RING SPINNING FRAME. Davis & Furber Co. Am. Textile Reptr. 74: 17-23 (Dec. 8, 1960). (458)

NEW APPROACH TO RING SPINNING. R. Millmore. Wool Record 98: 1610-1611 (Dec. 2, 1960).
The unusual feature of the Houget RTF frame is the incorporation of a device (RTF head) for imparting true twist to wool sliver as soon as it passes the front delivery rolls. (459)

PRODUCTION AND YARN TENSION PROBLEMS IN RING SPINNING. N. Primentas. Textile J. Australia 35: 618, 620-621 (Aug. 20, 1960).
The yarn tension problems arising from increasing the package size of ring spinning machines through the use of larger ring diameters or the use of longer bobbins and methods for their control (e.g. variable speed drives and balloon control devices) are discussed. (460)

NEW RING SPINNING MACHINE. Melliand Textilber. 41, No. 9: 1051-1056 (1960). In German. Through BCIRA 40: 4463 (1960).
The new Belgian ring spinning machine (J. Hanrez, Monceau-sur-Sambre) is of simple construction, very stable, easily accessible, completely encased, and suitable for all types of fibers. (461)

MANUFACTURE OF RINGS FOR SPINNING MACHINES. J. Grosu and G. Portnoi. Industria Textila 11, No. 7: 257-261 (1960). In Rumanian. Through BCIRA 40: 4465 (1960).
The technological process employed in Rumanian spinning ring manufacture is described, and results obtained in their practical use on textile machines are reported. (462)

TWISTING MACHINE WITH SEVERAL ROWS OF BOBBINS ABOVE EACH OTHER. F. Fourné. Rayonne et Fibres Synthet. No. 8: 817-832 (1960). In French. Through BCIRA 40: 4213 (1960).
Existing installations are reviewed, with reference to their efficiency and economic aspects. (463)

DEVELOPMENT OF THE DOUBLE-TWIST METHOD. J. Beyer. Tex 19, No. 8: 466-472 (1960). In Dutch. Through BCIRA 40: 4467 (1960).
The theoretical principles, the problems involved in the construction of double-twist spindles, the use of mechanical, magnetic and electrical means in the spindle construction, and the advantages of double-twisting are discussed. (464)

DOUBLING FROM PREWOUND CONES OR FROM COPS? H. Kern and G. Pfüller. Deut. Textiltech. 10, No. 9: 444-448 (1960). In German. Through BCIRA 40: 4212 (1960).
Doubling from cones is compared with doubling from cops, and the economic aspects resulting from it are discussed. The experiments were carried out on existing machinery. Special attention was paid to the effect on wage/kg, servicing range, and labor. The results prove that the classical doubling method is of greatest advantage. (465)

EFFECT OF INCREASED SPINDLE VELOCITY IN RING SPINNING ON YARN COST. F. Gerber. Textil-Praxis 15, No. 9: 902-905 (1960). In German. Through BCIRA 40: 4466 (1960).
The example given shows that increased spindle speed results not only in increased machine productivity but also in increased costs per kg of yarn, since both energy consumption and wages per machine are higher. Therefore, before increasing the spindle speed, accurate calculations should be made to ascertain whether the costs per kg of yarn justify the change. (466)

CHARGE CHANGES IN A THREAD PASSING THROUGH IONIZED AIR. CONTRIBUTION TO THE PROBLEM OF STATIC ELECTRICITY IN THE SPINNING MILL. H. Israël and H. Bücker. Textil-Praxis 15, No. 9: 908-913 (1960). In German. Through BCIRA 40: 4468 (1960).
A model is described, calculated, and presented nomographically, which approximately corresponds to the electrostatic charge conditions on a spinning machine. Special attention is paid to the calculation of the voltages between the thread-unwinding point and the earth and of the relationship between thread and air conductivity. It is found that under normal spinning conditions, these values are only insignificantly affected by the two factors mentioned. The calculated relationships can be represented in a nomogram from which it is possible to deduce easily the discharge states under all working conditions. (467)

Yarns B5

BULKED YARN MANUFACTURE IN CZECHOSLOVAKIA. PART 2. G. R. Wray. Textile Recorder 78: 51-52 (Jan. 1961).
Mirlan air-jet mechanical yarn bulking process currently in use in Czechoslovakia is critically examined. (468)

PRAGUE BULKED YARN SYMPOSIUM. PART 3. FUTURE PROSPECTS FOR CZECH BULKED YARNS. Skinner's Silk & Rayon Record 34: 1181-1182 (Dec. 1960).
Production parameters for the four main bulking methods (Tvasil false-twist crimping, Evalon edge-crimping, Mirlan air-texturizing, Anilon stuffer box crimping) are presented and their economic future is discussed. (469)

TEXTURING FILAMENT RHOVYL YARNS. Man-Made Textiles 38: 44 (Jan. 1961).
Practical recommendations for handling Rhovyl yarns on conventional crimping or false-twist equipment. (470)

AGILON EDGE-CRIMPED YARN. Textile World 111: 54-56 (Jan. 1961).
Yarn properties and operation of the 2110 machine for medium denier high-bulk yarn and the 2086 for high-stretch yarn are described. (471)

DYEING AND FINISHING OF BULKED TERYLENE. F. R. Smith (Imp. Chem. Inds. Ltd). Dyer 124: 877, 880, 883 (Dec. 2, 1960).
The physical properties, processing, finishing, and dyeing of Crimplene yarns and knit fabrics are compared with those from bulked yarns prepared by the false twist, Ban Lon, and Saaba techniques. (472)

UNORTHODOX TWIST ELEMENTS DURING PRODUCTION OF BULKED THERMOPLASTIC YARNS BY ROLLING. J. Tomanek. Textil 15, No. 8: 291-292 (1960). In Slovak. Through BCIRA 40: 4214 (1960).
The two spindleless methods described are based on the following principles: twisting, by friction, of the yarn between two plates moving in opposite direction and rolling between two or more surfaces (without contact), respectively. (473)

STUDY ON THE STRUCTURE OF BLENDED YARNS. PART 9. WET STRENGTH AND ELONGATION OF BLENDED YARNS OF COTTON AND RAYON STAPLE FIBER. S. Ueno. J. Soc. Textile Cellulose Inds. Japan 16, No. 9: 741-749 (1960). In Japanese (English summary). Through BCIRA 40: 4356 (1960).
In blended yarns with less than 67% rayon staple fiber, the higher the proportion of cotton the higher is the strength; but in yarns with a higher proportion of rayon staple fiber the higher is the elongation. When the wet/dry strength ratio is known the blend percentage may be estimated. (474)

YARN AND FABRIC STAINS. Fibre and Fabric 113: 4-5, 10 (Nov. 1960).
Several examples of staining are noted, and the steps involved in tracing their sources are described. (475)

CONFIGURATION AND MECHANICAL STATE OF SINGLE FIBERS IN WOOLEN AND WORSTED YARNS. T. S. Hickie and M. Chaikin (Univ. New South Wales). J. Textile Inst. 51: T1120-T1130 (Dec. 1960).
A radioactive fiber tracer technique has been used to investigate the configuration and longitudinal strain of single fibers in worsted yarns widely varying in count and twist. In addition, by making single fibers radioactive in segments, the distribution of strain along single fibers has been estimated. The technique has also been employed to study the configuration of single fibers in condensed woolen slivers and the change in state brought about by ring and mule spinning. The phenomenon of fiber migration is also discussed in the light of the results presented in the paper. 6 refs. (476)

RECENT CHANGES IN YARN HANDLING AT BIBB. F. Boswell (Bibb Mfg. Co.). Proc. So. Textile Methods Standards Assoc.: 12-19 (Fall 1960).
Recently completed projects involving yarn handling and transport procedures are described. (477)

FABRIC PRODUCTION C

DEVELOPMENT OF THE EMBROIDERING MACHINE. R. B. Christ. Textil-Rundschau 15, No. 9: 487-491 (1960). In German. Through BCIRA 40: 4258 (1960).
The historical development of embroidery is discussed, and reference is made to the first hand-embroidery machines and various types of modern shuttle-embroidery machines. (478)

Warping, slashing, yarn preparation C1

MODERN SIZING TECHNIQUE. B. S. V. Rao (Univ. Madras). Indian Textile J. 70: 653-657 (Sept. 1960).
The purpose of sizing, size preparation and homogenization, maintenance of size level, size viscosity measurement, use of Shirley regulator, warp drying, and the design and construction of the multi-drive are covered. 20 refs. (479)

MEASUREMENT OF THE CHARGE FOR SIZING. J. Balter. Industrie Textile: 540-544 (July/Aug. 1960). In French. Through BCIRA 40: 4476 (1960).
The construction and mechanism of the device developed by the Sucker AG for proportioning the quantity of size in relation to the quantity of fibrous material treated are described in detail. The procedure consists in measuring simultaneously the length of the circulating material and the consumption of the product used for the treatment and in determining, intermittently, the ratio of the two values. The quotient of the quantity of the product consumed for the treatment and the length of material treated (assuming constant width of the materials) gives the absorbed quantity. (480)

GOOD CHEESES FACILITATE DYEING. K. Hensch. Spinner u. Weber 78, No. 9: 608-612 (1960). In German. Through BCIRA 40: 4471 (1960).
The production of soft yarn packages, suitable for dyeing is discussed, with reference to the Schlafhorst BKN cheese winding machine. (481)

BARBER-COLMAN SPOOLER AND WARPER: MAINTENANCE SCHEDULE. V. M. Deolkar. Textile Dig. 19: 83-87 (Apr.-June 1958). (482)

USTERMATIC WARP TYING MACHINE. H. Haldimann (Zellweger Ltd). Swiss Tech. No. 3: 42-45 (1960).
The Ustermatic can be set for the following types of tying: both warps with leases 1:1, 2:2, or 3:3, etc.; new warp without a lease, old warp with a lease; new warp with a lease, old warp without a lease; and both warps without a lease. Other unusual features are noted. (483)

APPLYING PIECE RATES TO ABBOTT WINDER TENDERS. R. H. Woods and D. W. Greer (U.S. Rubber Co.). Proc. So. Textile Methods Standards Assoc.: 20-25 (Fall 1960). (484)

AUTOMATION OF CHEESE WINDING. Z. ges. Textil-Ind. 62, No. 19: 833-839 (1960). In German. Through BCIRA 40: 4250 (1960).
A detailed description of the development and construction of the Schlafhorst Autoconer is given. (485)

Weaving C2

DEVELOPMENTS IN THE MODERN JACQUARD. PART 1. Textile Recorder 78: 53-56, 59 (Jan. 1961).
Edited abstracts of a series of lectures held at Blackburn College of Technology dealing with various aspects of modern jacquard weaving and the mechanisms involved. Scope of jacquards in woven fabric production, by D. C. Snowden, p. 53-54; Mechanisms of the coarse pitch jacquard, by J. S. Dimelow, p. 54-56; Fine pitch jacquards, by G. Dracup, p. 56, 59. (486)

BEATUP AGAINST A FIXED REED. C. Bassecoeur. Man-Made Textiles 37: 40 (Dec. 1960).
The principle of a beatup system in which the reed is stationary and the cloth moves (proposed by E. R. Laithwaite) is described, and the drawbacks of such a system are critically examined. (487)

OSCILLATING DOBBY. R. Maier. Z. ges. Textil-Ind. 62, No. 19: 840-841 (1960). In German. Through BCIRA 40: 4254 (1960).
The development and the mechanism of the Lentz oscillating dobby are described, and the differences between the latter and the previous constructions HBS II and HBS III are pointed out. (488)

INNOVATIONS ON THE COMBINATION FOUR-COLOR AUTOMATIC LOOM, MODEL CFK. H. Schieblich. Deut. Textiltech. 10, No. 9: 461-466 (1960). In German. Through BCIRA 40: 4253 (1960).
The innovations and improvements of the loom (VEB Webstuhlbau Karl-Marx-Stadt) comprise a swing lever for releasing the pirn, a tester for ascertaining the position of the shuttle, an electrically driven pirn-changing motion, a negative electric warp-beam regulator and a warp-beam bearing. The devices are described, and their advantages over the existing ones are pointed out. (489)

FAULTLESS REEDS ENSURE HIGH PRODUCTION. H. Walter. Textil-Praxis 15, No. 9: 924 (1960). In German. Through BCIRA 40: 4482 (1960).
Directions are given for the choice of reeds in dependence of the type of fabric to be woven and for their maintenance and repair. (490)

TRIAL MANUFACTURE OF HIGH SPEED LOOM. A. Tateishi, N. Akagawa, H. Tsuboi, K. Hosoda, and M. Kimura. Bull. Textile Research Inst. (Japan) No. 54: 13-21 (1960). In Japanese (English summary). Through BCIRA 40: 4479 (1960).
In the reconstructed loom the tappet dwell is half a pick (180° of crankshaft motion); the shuttle boxes and lay are separated; the reciprocating motion of the lay is derived from newly designed cams, not from crank action; the main parts are lengthened by use of aluminum alloy; and a warp tension device is installed between the dropper box and the back roller. Smooth running at 270 picks/min in 50-in. reed width and reduced power consumption are claimed. (491)

METHOD FOR MEASURING THE PICKING FORCE ON THE LOOM AS MEANS FOR OBJECTIVE LAY ADJUSTMENT. H. Perner and J. Erbe. Deut. Textiltech. 10, No. 9: 454-461 (1960). In German. Through BCIRA 40: 4256 (1960).
After a description of the methods available at present for evaluating the picking force of a picking motion, the maximum acceleration of a mass fixed to a spring and fitted in the shuttle is proposed as measure of the picking force. The acceleration of the mass, differing from that of the shuttle, causes (by overcoming the spring force) a deflection of the mass, which is recorded on a diagram paper. The curve can be used to determine the maximum acceleration of the mass during shuttle picking. The device is designed for insertion in shuttles of different sizes. (492)

IMPROVING EFFICIENCY IN THE WEAVING MILL. A. Wettstein. Swiss Tech. No. 3: 45-46 (1960).
The automation of weft replenishment on Ruti looms by the use of bobbins wound with a tip reserve in conjunction with an automatic magazine is described. (493)

IDEAS UNDERLYING WEAVING MACHINE PATENTS. PART 12. R. H. Rossmann. Textil-Praxis 15, No. 9: 913-917 (1960). In German. Through BCIRA 40: 4478 (1960).
This is a critical review of a further 14 German patents referring to looms and loom components. (494)

SAURER TYPE 100 W AUTOMATIC LOOM. Adolph Saurer Co. Ltd. Swiss Tech. No. 3: 51-52 (1960).
Salient features of the 100 W 6-color loom are briefly noted. (495)

PRODUCTION CAPACITY AND PERSONNEL REQUIREMENTS OF SULZER WEAVING MACHINES. Swiss Tech. No. 3: 47-50 (1960). (496)

PRODUCTION OF HEAVY BELTING. E. Kranz. Textil-Praxis 15, No. 9: 925-927 (1960). In German. Through BCIRA 40: 4483 (1960).
A brief description is given of the mechanism of looms for tapes or strap belts. (497)

DETERMINING THE WORKLOAD OF JOBBERS IN LOOMSHED. N. Jayaraman. Textile Dig. 21: 79-81 (Apr.-June 1960).
A combination of the usual time study techniques and random observations is suggested for determining the number of looms to be assigned. (498)

Knitting C3

FUNDAMENTALS OF WARP KNIT ENGINEERING. PART 7. A. Reisfeld (Gehring Textiles, Inc.). Knitted Outerwear Times 30: 7-9, 24-25 (Jan. 2, 1961).
The impact of twist and the numerous factors involved in its determination are discussed. 13 refs. (499)

FUNDAMENTALS OF WARP KNIT ENGINEERING. PART 8. A. Reisfeld (Gehring Textiles, Inc.). Knitted Outerwear Times 29: 87, 94-95 (Jan. 23, 1961).
Frictional phenomena and their influence on warping and knitting are discussed. 6 refs. (500)

CONVERTING STANDARD INTERLOCK MACHINES. C. Reichman. Knitted Outerwear Times 30: 3, 5 (Jan. 2, 1961).
The limitations and conditions necessary in converting plain interlock machines to double jersey manufacture are discussed. The range of double jersey structures producible are indicated, and it is pointed out that the design limitations for double jersey knitting on interlock machines varies with each machine model and the degree to which a knitter is willing to invest in a re-camming job. (501)

KNITTING WITH AGILON D NYLON YARN. Brit. Nylon Spinners Ltd. Knitted Outerwear Times 29: 81-85, 92-93 (Jan. 23, 1961).
The information given is taken from reference cited in abstr. 100/61. (502)

LOW-COST WAY TO KEEP HOSIERY QUALITY UP. R. D. Brackett. Textile Inds. 125: 93-94 (Jan. 1961).
Maintenance pointers for worn sinker heads on full-fashioned hosiery machines. (503)

WARP KNITTING: PREPARATORY AND FINISHING PROCESSES. Textile Weekly 60 (2): 1437-1439 (Dec. 16, 1960). (504)

LACE ON MODERN RASCHEL MACHINES. B. Wheatly. Man-Made Textiles 37: 46, 49-50 (Dec. 1960).
Methods of producing Brise-å-bris curtain nets are described. (505)

DOGLESS DIAL HEAD IN PHILIP MACHINE. C. Reichman. Knitted Outerwear Times 30: 3, 5 (Jan. 9, 1961).
The dogless dial head in the Philip plain and fancy jacquard pattern double jersey knitting machine is based on the use of two large stationary gears around the circumference of the machine, one located above the dial near the bottom stop motions and the other under the cylinder. Its advantages over other types of dogless systems are cited. (506)

CONSIDERATION OF THE DESIGN OF KNITTING CAM MECHANISMS. D. L. Munden (Univ. Leeds). J. Textile Inst. 51: P712-P716 (Dec. 1960).
Recent suggestions for increasing production on circular knitting machines by increasing the number of feeders on the machines either by increasing the angle of the stitch cam or by the use of magnetic cam action are critically examined. (507)

Fabrics C4

NOTE ON THE SCORCHING TEMPERATURE OF WOOL FABRIC. K. Baird. Textile J. Australia 35: 918-919 (Oct. 20, 1960).
Report of visual observations on the yellowing in undyed worsted fabric pressed by a domestic iron at different temperatures. 3 refs. (508)

NEW IDEAS AND RECENT DEVELOPMENTS DESIGNED TO COMBAT THE PILLING PROBLEM. A. J. Hall. Textile Recorder 78: 57-59 (Jan. 1961).
Methods of measuring pilling tendency, theoretical aspects of pill formation, and special finishing treatments now available to inhibit the formation of pills on the surface of woven and knitted fabrics are discussed. (509)

NOTES ON FABRIC PILLING. W. Primentas. Textile J. Australia 35: 878, 894-896 (Oct. 20, 1960).
The mechanism of pilling, the influence of fiber, yarn, and fabric properties on pilling, and methods of test are summarized. 7 refs. (510)

MANUFACTURE OF ASBESTOS CLOTH. Textile Weekly 61 (1): 32-33 (Jan. 6, 1961).
The steps in the manufacture of asbestos cloths are outlined, and the uses of fabrics and intermediate products are summarized. (511)

AN EXAMINATION OF FABRIC PERFORMANCE STANDARDS. Modern Textiles Mag. 42: 39-45 (Jan. 1961).
Introduction, by C. A. Baker, p. 39-40; Retailer's viewpoint, by W. Burston, p. 40-41; Need for performance labels, by M. J. Lovell, p. 41-42; Program of "minimum limits," by J. L. Fri, p. 42-43; How standards are set up, by J. W. McNair, p. 43-44; How hospitals use standards, by R. H. Layer, p. 44-45. (512)

COURTELLE ACRYLIC FABRIC AS BARRIER IN PLASTICS REINFORCEMENT. Parglas Ltd. Man-Made Textiles 37: 42-43 (Dec. 1960).
The Parglas method exploits the different characteristics of two manmade fibers to make a vessel almost completely resistant to chemical attack and possessing an excellent strength factor. A layer of glass fabric bonded to the outer surface of an epoxy resin impregnated Courtelle laminate provides the strength factor, while the latter provides the necessary chemical resistance. (513)

HOW YOU CAN ENGINEER FOR FABRIC STRENGTH. J. E. Sands, H. W. Little, and L. A. Fiori (So. Reg. Research Lab.), and W. A. Faught (Agri. Mktg. Serv.). Textile Inds. 125: 52-54 (Jan. 1961).
As a step in developing basic relationships between yarn and fabric properties, a statistical evaluation of the effect of yarn properties and fabric structure on the grab breaking strength of fabrics is presented. 17 refs. (514)

ORIGIN OF DEFECTS CAUSED BY OILING AND THEIR PREVENTION. L. Mauri. Investigacion e Informacion Textil 3, No. 2: 101-114 (1960). In Spanish. Through BCIRA 40: 4368 (1960).
Reference is made in particular to the oxidation of mineral oils, chemical and physical methods for determining the oxidizability of the oils, the Houghton method, and prevention of defects caused by oiling. (515)

PREVENTION OF WEAVING FAULTS CAUSED BY LOOSE WEFT ENDS. Melliand 41, No. 4: 255 (1960).
Pointers on the adjustment and control of the cutting mechanism and shuttle motion are given. (516)

STUDIES ON THE FELTING PROPERTIES OF SOUTH AFRICAN MERINO WOOLS. D. P. Veldsman and C. C. Kritzinger (South African Wool Textile Research Inst.). J. Textile Inst. 51: T1257-T1273 (Dec. 1960).
A laboratory technique, closely simulating industrial practice, has been developed for the examination of the relative feltability of scoured Merino wools. The extent of feltability is evaluated in terms of breaking load and porosity to air of the resultant felt. The effects of crimp, fiber diameter, and weathering were determined. Australian wools were examined in a parallel study. It is shown that fiber diameter and weathering play the same roles in the felting of Australian wools as in South African wools. The effect of crimp variations in the Australian wools is, however, much less pronounced. 20 refs. (517)

SHRINKAGE IN WOVEN FABRICS. N. Brindle. Textile Recorder 78: 64-65 (Nov. 1960).
Factors affecting the residual shrinkage of fabrics from the shrinkage process until they reach the consumer are discussed from the viewpoint of the cloth buyer, garment retailer, and consumer. (518)

MANMADE FIBERS IN THE SHIRT TRADE. Man-Made Textiles 38: 36-37, 39 (Jan. 1961).
Factors responsible for increased manmade fiber consumption in the shirting trade are noted, and examples of various constructions are described. Swatches. (519)

NRMA SURE CARE SYMBOLS. Nat. Retail Merchants Assoc. Am. Textile Reptr. 74: 9-10 (Dec. 29, 1960). (520)

INFLUENCE OF FIBER STORAGE ON CLOTH DIMENSIONS, AND SOME OBSERVATIONS ON CHANGES DURING FINISHING. J. Lawes and M. Townsend (Wool Inds. Research Assoc.). J. Textile Inst. 51: T1274-T1289 (Dec. 1960).
Experiments have shown that the storage times of tops and rovings have an appreciable effect on the relaxed dimensions of otherwise identical cloths. The effect is caused by the latent fiber strain produced during storage of these packages, and may affect the shrinkage of the cloth during making-up. Data have been obtained on the dimensional changes occurring during scouring, dyeing and finishing, showing the effects of crabbing and of excessive width-way stretch during tentering. (521)

EFFECT OF ALKALI TREATMENT ON THE RESIDUAL SHRINKAGE VALUE IN COTTON BED-LINEN FABRIC. R. Fontaine. Deut. Textiltech. 10, No. 9: 474-476 (1960). In German. Through BCIRA 40: 4288 (1960).
It is shown that alkali treatment (with sodium hydroxide of at least 18° Bé) favorably affects the residual shrinkage values of bed- and table-linen fabrics. The effect is increased by prewetting and, especially, by desizing and precleaning the fabric, to which a reduced shrinkage tendency is to be imparted. (522)

THEORETICAL CONSIDERATIONS OF BENDING AND CREASING IN A FABRIC. N. J. Abbott, M. J. Coplan, and M. M. Platt (Fabric Research Labs.). J. Textile Inst. 51: T1384-T1397 (Dec. 1960).
A mechanistic analysis of fabric flexure is outlined, relating fabric behavior to fiber properties through the geometry of the structure, particularly as it is affected by fiber interactions. The influence of two factors is discussed: first, the degree of fiber association or clustering which exists within the yarn; secondly, the effect of the yarn intersections within the fabric in producing a cyclic fluctuation of rigidity along the length of the yarn. Equations are derived which show the influence of these factors on the flexural rigidity of the fabric, and on the average maximum strain to which the fibers are subjected in any bent configuration. The practical implications of this concept are discussed in terms of fabric stiffness and wrinkle recovery. 5 refs. (523)

NONWOVEN FABRICS AND THE CARPET INDUSTRY. E. H. Kesterton (Lancashire Felt Co. Ltd). Fibres and Plastics 21: 358-360 (Dec. 1960).
As an example of the trend in the British carpet industry to tufted carpets, a modern large-scale carpet tufting plant is described. (524)

IVAN'S OTHER SHIRT: TOMORROW MAYBE. R. E. Stockwell. Textile Inds. 125: 85-86 (Jan. 1961).
Brief report on the current status of quality and cost of ready-made clothing in Russia. (525)

BREATHABLE PLASTIC COATED AND FABRIC BACKED PLASTIC WATERPROOF FABRICS. Am. Textile Reptr. 75: 9-10, 54 (Jan. 12, 1961).
The construction, properties, and applications of Reevair (ESB-Reeves), Rayntyte (Manart Textile Co.), and Breathable Watahyde (Harte & Co.) are described. Reevair is available as a film-coated fabric and as an unsupported film both of which utilize a plastic honeycombed with microscopic pores. Rayntyte owes its breathability to the combination of a finish and a fabric which leave the weave of the cloth entirely unclogged so that air passes through freely. Breathable Watahyde is a vinyl with elasticized flannel or knit backing. Its breathability is derived from thousands of invisible pores. (526)

LEATHER AND VINYL-COATED UPHOLSTERY MATERIALS. J. C. Fridley and R. W. Padgett. J. Home Econ. 52: 841-844 (Dec. 1960).
In this study on the comparative merits of leather and vinyl-coated fabrics for upholstery, the following areas of testing were used: accelerated aging by an oven method; strength of materials by breaking strength and trapezoid tear strength; stretch and set; comparative wear on the Taber Abraser and the Stoll Universal Wear Tester; color evaluation by crocking, resistance to acid and alkali, and soil and stain removal; flammability; tackiness; and fabric cost, weight, and width. 5 refs. (527)

BLENDING COTTONS DIFFERING WIDELY IN MATURITY. PART 2. EFFECT ON THE PHYSICAL PROPERTIES OF A SHEETING FABRIC (TYPE 128). L. A. Fiori, G. L. Louis, and J. E. Sands (So. Reg. Research Lab.). Textile Research J. 30: 926-933 (Dec. 1960).
This investigation compares properties of sheeting woven with yarns spun from a blend of fibers differing widely in fiber fineness with comparable properties of a similar sheeting woven with yarns spun from a control cotton of the same average fineness. The data demonstrate that blending fine with coarse fibers in proportions of 60% to 40% does not detrimentally affect the important physical properties of gray, bleached, and bleached and dyed fabrics. Commercial acceptability evaluations showed that, in general, marketable bleached materials can be manufactured from a blend of extremely fine and coarse fibers. The dyed fabrics were not generally commercially acceptable due to nep imperfections. 13 refs. (528)

MUSLIN AND PERCALE SHEETS AND PILLOWCASES. Consumer Repts. 26: 18-20 (Jan. 1961).
Ratings of 40 makes on the basis of durability tests. (529)

HOME FURNISHING FABRICS 1961. Modern Textiles Mag. 42: 22, 47-50 (Jan. 1961). (530)

OUTER SPACE TEXTILES. Am. Textile Reptr. 75: 17-19, 40 (Jan. 12, 1961).
Types of space-age fabrics being produced are tabulated. (531)

BYWATER GN SINGLE PUNCH NEEDLE LOOM FOR WIDE INDUSTRIAL FELTS. Wm. Bywater Ltd. Textile Recorder 78: 68 (Jan. 1961). (532)

EXPERIMENTS ON THE BIOLOGICALLY EFFECTIVE INSULATION VALUE OF WOOL. F. W. Behmann (W. G. Kerckhoff-Inst. Max-Planck G.). J. Textile Inst. 51: T1494-T1503 (Dec. 1960).
Physiological, physical, and theoretical investigations were carried out on technologically similar knitted fabrics made from wool and polyamide fibers in order to study the significance of the behavior of clothing towards moisture. 10 refs. (533)

BETWEEN PAPER AND TEXTILES. Du Pont Mag. 55: 2-5 (Jan./Feb. 1961).
Textryls are nonwoven structures prepared from synthetic fibers and fibrids on papermaking machinery. The fibrids hold the fibers together until firmer bonds can be formed by heat fusion at the end of the process. Textryls offer a combination of strength, toughness, moisture insensitivity, chemical resistance, and a pleasant hand or feel. Their potential applications are noted. (534)

FELTS FOR PAPERMAKING. Huyck Felt Co. Rohm & Haas Reptr. 18: 23-27 (Nov./Dec. 1960).
Steps in the manufacture of papermakers felts are outlined. (535)

PHYSICAL PROPERTIES OF FELT: MEASUREMENT OF FELT QUALITY. A. Baines, T. Barr, and R. L. Smith (Brit. Hat & Allied Feltmakers' Research Assoc.). J. Textile Inst. 51: T1247-T1256 (Dec. 1960).
The present investigation was carried out to provide criteria which can be used to assess the quality of felt. A study was made of the changes in the dimensional characteristics, area, thickness, and volume of hardened batts of wool with time of felting. The criteria for the assessment of felt quality were established as the tensile strength (T) the apparent density (D) and the felted fiber modulus (M), and a composite T. D. M. index is proposed for the comparison of the quality of hat bodies which is based on the mean quality values of the industry. 11 refs. (536)

MAKING NONWOVENS AT GREETLAND. Bondina Ltd. Man-Made Textiles 37: 32-36 (Dec. 1960).
The general procedures used in making Vilene interlinings and other Bondina nonwovens are outlined, and the growing industrial applications of the latter are noted. Swatches. (537)

NONWOVEN TEXTILES: SOME MARKET ASPECTS. Fibres and Plastics 21: 360-361 (Dec. 1960).
The expansion in nonwoven textiles is noted. The importance of fiber and binder choice as related to end-uses is stressed. (538)

NEEDLE KNITTING: NEW METHOD FOR FABRIC PRODUCTION. H. Kemter. Spinner u. Weber 78, No. 8: 530-535 (1960). In German. Through BCIRA 40: 4484 (1960).
Three chain-stitching machines for the production of nonwoven materials are described: the Malimo 500 for a working width of 500-700 mm; the Malipol 750 (for up to 2,500 mm), and the Maliwatt (for up to 2,500 mm); the first is used for sewing together warp and weft thread layers, the second for stitching pile threads into a ground fabric, and the third for chain-stitching of fiber fleeces. (539)

TEXTRYL NONWOVENS. R. A. A. Hentschel (E. I. du Pont de Nemours & Co.). Am. Textile Reptr. 75: 55-56 (Jan. 12, 1961).
The manufacture of textryls by hot calendering so as to fuse the fibrid binders and develop maximum strength properties is described, and techniques for fabricating structures with a wide range of properties are briefly mentioned. (540)

LATICES USED IN PRODUCING NONWOVENS. Celanese Corp. Am. Textile Reptr. 75: 59-60 (Jan. 12, 1961).
List of bonding agents and latices employed in the production of nonwoven fabric products and their manufacturers. (541)

EUROPEAN TUFTING INDEX, 1960-61. Skinner's Silk & Rayon Record 34: 1210-1223 (Dec. 1960).
Alphabetical listing of British manufacturers of tufted textiles, tufting machinery, ancillary equipment, chemicals and backing compounds, dyes, backing cloths, and fibers, as well as yarn spinners for tufted textiles, dyers, and printers. (542)

MODERN PRODUCTION MACHINERY FOR NONWOVEN FABRICS. R. R. Clegg (Tomlinson's (Rochdale) Ltd). Textile Merc. 144: 14-20 (Jan. 6, 1961).
The fundamental equipment required in the manufacture of nonwoven fabrics is discussed under the following headings: raw stock preparatory machinery; web forming equipment; bonding equipment; heat, fixing, drying, or setting equipment; finishing equipment; and ancillary equipment. (543)

WOOL FABRICS AS GARMENT CONSTRUCTION MATERIALS. J. Lindberg, L. Waesterberg, and R. Svenson (Swedish Inst. Textile Research). J. Textile Inst. 51: T1475-T1493 (Dec. 1960).
The basic requirements of a garment in use and basic techniques in garment manufacture are briefly discussed. The relevant mechanical properties, of buckling, compression in the plane of the fabric and shearing are described, and methods of measurement are indicated. A property termed "formability" of a fabric is defined. To retain a given form the fabric must be set, and it is shown that, for stitching with overfeed, there is a definite relationship between settability, formability and the degree of overfeed. Dimensional stability is discussed and measured with relation to steaming, wetting, and steam pressing. 15 refs. (544)

SPECTROPHOTOMETRIC STUDY OF YELLOWING IN WOOL FABRIC. F. G. Lennox (C. S. I. R. O. Wool Research Labs.). J. Textile Inst. 51: T1193-T1213 (Dec. 1960).
Detailed examination of the yellowing of wool fabric by heat and by UV irradiation, as well as treatments which confer partial protection against yellowing or which bleach the yellowed fabric. Amino-acid analysis of wool fabric after yellowing, and exposure of individual amino acids and peptides to aqueous heating and irradiation treatments, suggest that cystine is the amino acid chiefly responsible for the discoloration process. 24 refs. (545)

FINISHING D

DYEING AND FINISHING FABRICS CONTAINING TRICEL TRIACETATE FIBER. R. J. Mann (Courtaulds Ltd). J. Soc. Dyers Colourists 76: 665-672 (Dec. 1960).
The salient properties of Tricel, as they affect the dyer and finisher, are reviewed and processes for the treatment of knitted and woven fabrics are described. (546)

NEW PRODUCTS DEVELOPED SINCE NOVEMBER 1959. Am. Dyestuff Reptr. 49: 913-944, 965-967 (Dec. 12, 1960).
Products which have been placed on the market or further developed since November 1959 are arranged according to the classifications: (1) chemicals, (2) coloring materials, and (3) equipment. Suppliers are listed in alphabetical order and the individual products and their properties are noted under the company name. (547)

SURVEY OF BRITISH DYESTUFFS AND CHEMICALS. Man-Made Textiles 38: 49-52 (Jan. 1961).
Outline of significant new products introduced during 1960. (548)

TECHNICAL DEVELOPMENTS IN 1960: TEXTILE FINISHING. Textile Weekly 60 (2): 1514-1518 (Dec. 23, 1960). (549)

FINISHING TOP-QUALITY TEXTURED FRENCH CREPES. Hellwig Dyeing Corp. Textile World 111: 86-87 (Jan. 1961). (550)

SPECIFIC PROBLEM AREAS IN DYEING AND FINISHING. R. W. Malone (Riegel Textile Corp.). Proc. So. Textile Methods Standards Assoc.: 26-31 (Fall 1960).
The costs of operating a finishing department are analyzed, and the areas where industrial engineering can be applied to increase profits are explored. (551)

Chemical processes D1

IMPARTING WRINKLE RESISTANCE TO COTTON WITH 1,1'-CARBONYLBISAZIRIDINE. L. H. Chance, R. M. Perkins, and W. A. Reeves (So. Reg. Research Lab.). Textile Research J. 30: 918-926 (Dec. 1960).
Cotton print cloth and broadcloth were made wrinkle resistant by treating with carbonylbisaziridine (CBA) by the conventional process of padding, drying, and curing. Data are presented for fabric treated with and without the use of an acid catalyst, zinc fluoborate. An after-treatment with Primenit VS emulsion increased the crease recovery angle. Monsanto crease angles of over 300° were obtained with resin add-ons as low as 4.5%. In general the Elmendorf tearing strength was reduced 40-50%. This was improved somewhat by the use of a softener. The finish was quite stable to home laundering. When no catalyst was used in the solution, a reduction in breaking strength was observed after the chlorine bleach and scorch. When freshly prepared CBA solutions containing zinc fluoborate were used, there was no reduction in the strength of fabric after the chlorine bleach and scorch. However, all fabrics containing the finish were discolored in the scorched areas. 6 refs. (552)

PLEATS AND CREASES IN FABRICS AND GARMENTS. A. J. Hall. Wool Rev. 34: 27, 29 (Nov. 1960).
The author discusses the permanent pleating of wool by processes which cause a breakage of the disulfide bonds followed by their reformation (Si-Ro-Set, Speakman, Immacula) and of synthetic fibers by processes based on the principle of fiber deformation. (553)

EPOXY RESINS: THEIR APPLICATIONS AND TECHNOLOGY. H. Lee and K. Neville. McGraw-Hill, New York. 1957. 305 p. $8.00.
The book discusses the technical background and general chemistry of the resins and indicates the specific formulations that can be developed and the application techniques that have proved successful. (554)

SILICONES FOR TEXTILES. PART 2. APPLICATIONS. C. Smith (Midland Silicones Ltd). Man-Made Textiles 37: 53-55 (Dec. 1960).
Formulations, reactions, and versatility of silicone textile finishes are briefly reviewed. (555)

CLEAN, BOILED HOSPITAL BLANKETS. T. A. Pressley (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T1214-T1225 (Dec. 1960).
Large-scale boiling of shrink-resistant all-wool blankets using two detergent mixtures has now been carried out in Melbourne for over a year and it has proved to be a trouble-free, practical method of producing clean, boiled wool blankets for hospital use. Individual blankets have withstood a hundred high-temperature washing cycles and are still in excellent condition. 19 refs. (556)

SOME STUDIES ON THE CROSS-LINKING OF COTTON CELLULOSE. PART 1. CHEMICAL AND PHYSICAL ASPECTS. F. S. Perkerson, W. A. Reeves, and V. W. Tripp (So. Reg. Research Lab.). Textile Research J. 30: 944-954 (Dec. 1960).
The currently-used types of cross-linking agents and some of their effects on cotton are discussed. The primary weaknesses or shortcomings of the finishes achieved with these agents are pointed out. Evidence is presented which indicates that polymer formation produced concurrently with cross-linking improves the over-all minimum-care properties of cotton fabric, although polymer formation alone does not improve the wrinkle recovery. Cross-linking agents which are capable of forming thermosetting resins generally are required in somewhat larger add-ons to produce wrinkle recovery angles in the practical range than are those agents that do not form thermosetting resins. The extent of permanent set is related to the extent of cross-linking. Moisture regain and density of the cross-linked cottons are more dependent upon the state of fiber swelling at the time of cross-linking than upon the extent of cross-linking. 21 refs. (557)

SILICONES IN THE PROCESSING OF TEXTILES. E. Fitzgerald-Lee. Textile Recorder 78: 60-61 (Jan. 1961).
The potential applications of silicones in textile production, from fiber treatment to finished garments, as well as solutions for processing and maintenance problems for the engineer, are briefly surveyed. (558)

SCOTCHGARD: A STAIN REPELLENT. Consumer Repts. 26: 5-6 (Jan. 1961).
Results of tests on 22 different fabric samples treated with Scotchgard and stained with 23 different substances are presented. (559)

PRODUCT FOR THE PERMANENT ANTISTATIC FINISH OF SYNTHETIC FIBERS. H. Frotscher (Bohme Fettchemie GmbH). Textile J. Australia 35: 636-637 (Aug. 20, 1960).
The degree of fastness to laundering of Nonax 975 on polyester, acrylic, and polyamide fibers is demonstrated. (560)

CHEMICAL MODIFICATION OF WOOL. J. Textile Inst. 51: T637-T650 (Dec. 1960).
Part 1. Cyanoethylation, by M. Oku and H. Ishibashi, p. T637-T642; Part 2. Benzylation, by M. Oku and H. Ishibashi, p. T642-T646; Part 3. Formalization of wool under stretched conditions, by M. Oku, G. Kajimoto, and H. Ishibashi, p. T646-T650. 20 refs. (561)

CROSS-LINKING OF PARTIALLY CYANOETHYLATED COTTON. PART 3. ACID SCOURING OF AMIDOXIMATE AND SUBSEQUENT FORMALDEHYDE-CURING. M. Negishi, H. Ito, and K. Takahashi (Gumma Univ.). Textile Research J. 30: 999-1003 (Dec. 1960).
By 0.1-0.5% hydrochloric acid scouring, which has been shown to prevent the discoloration of the amidoximates of partially cyanoethylated cotton fabrics in the previous paper, it was found that the amidoximate hydrochloride salt might be formed. In comparison with unscoured amidoximates, the scoured material, even when formaldehyde-cured under noncatalyzed neutral conditions, with or without tension, had exceedingly improved crease resistance without much loss in tensile strength, elongation, and tear strength. The softness of cotton was retained. It was deduced that the amidoximate hydrochloride might presumably split off hydrochloric acid and act as a self-catalyst in the formaldehyde-curing. 5 refs. (562)

CYANOETHYLATION OF COTTON IN AQUEOUS MEDIUM. N. M. Bikales and L. Rapoport (Am. Cyanamid Co.). Textile Mfr. 86: 500-503 (Dec. 1960).
The authors conclude that the cyanoethylation of cotton in aqueous medium proceeds at a substantially slower rate than in conventional processes, and the maximum degree of cyanoethylation obtainable falls far short of full cyanoethylation. 20 refs. (563)

WASHABLE NON-IRON FABRICS FROM WOOL. A. J. Farnworth, M. Lipson, and J. R. McPhee (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T1504-T1516 (Dec. 1960).
The flat setting of shrinkproofed wool can give washable, non-iron effects on pure wool fabrics. Setting, which consists of steaming fabrics containing 50% by weight of 1% sodium bisulfite solution for 5 min on a blowing machine, prevents surface distortion of the fabrics during subsequent washing. The present paper describes studies on a series of specially constructed fabrics, assessing their suitability for treatment, together with the optimum conditions required for treatment of each. Problems arising in mill processing are also reported, as well as some preliminary studies on making-up of garments from treated wool. 10 refs. (564)

IMPROVEMENTS IN EPOXY-AMINO POLYAMIDE FINISHES FOR EASY-CARE WOOL FABRICS. C. E. Pardo (Western Reg. Research Lab.). J. Textile Inst. 51: T1462-T1474 (Dec. 1960).
This paper describes significantly improved finishes for control of felting shrinkage in wool apparel fabrics obtained with blends of glycerol-based and bisphenol A-based epoxy resins with an amino polyamide resin. Oxidative pretreatment of the fabric improves the shrinkage-resistance. Much of the stiffness imparted to the fabric by the resin treatment is removed by mechanical methods. Successful application of a typical resin formulation to full-size woolen fabrics is described. 6 refs. (565)

DEVELOPMENT OF WASH-AND-WEAR WOOL FABRICS FOR MODERN HOME LAUNDERING. A. E. Brown and J. F. Krasny (Harris Research Labs.). J. Textile Inst. 51: T1414-T1437 (Dec. 1960).
The present paper analyzes the effect of yarn and fabric construction variables on the wash-and-wear performance of worsted fabrics. Analysis of all the results indicates that many untreated wool fabrics can be used in wash-and-wear garments. Further broadening of the fabric range can undoubtedly be accomplished by proper application of chemical stabilization treatments as well as proper fabric construction based on the above principles. 17 refs. (566)

PERMANENT SETTING OF WOOL. A. J. Farnworth (C.S.I.R.O. Wool Research Labs.). Am. Dyestuff Reptr. 49: P996-P1001 (Dec. 26, 1960).
A brief review is made of the evidence for believing that permanent set in wool fibers results from the rearrangement of hydrogen bonds following the scission of some disulfide bonds. The application of this work to obtain permanent creasing and pleating of pure wool garments and washable non-iron wool fabrics is described. 8 refs. (567)

UVITEX BRANDS FOR ALL-ROUND AND HEAVY-DUTY DETERGENTS. G. Dürig (Ciba Ltd). Ciba Rev. 12, No. 140: 34-37 (Oct. 1960).
The use of Uvitex brighteners in detergents to eliminate undesirable yellowing while increasing brightness is discussed. (568)

IMPORTANT FACTORS IN WASH-AND-WEAR FINISHING TECHNIQUES. B. C. M. Dorset. Textile Mfr. 86: 495-499, 503 (Dec. 1960).
In this discussion of factors affecting results in wash and wear finishing, recent reports in the literature on the following are discussed: effect of the presence of water in formaldehyde treatment of cotton; epoxy resin treatments of cellulose; dihydrazide-formaldehyde resins for cellulose; factors affecting formaldehyde liberation. (569)

PROCESSING SOLVENT-DEGREASED WOOL. M. Lipson and G. W. Walls (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T953-T967 (Dec. 1960).
Experiments comparing the processing of solvent-degreased wool with that obtained by soap-soda scouring in several plants are described; it is shown that card and comb production rates considerably higher than normal are possible using solvent-degreased wool and a higher combing tear and a better top can be produced. At normal processing rates, the solvent-degreased wool gives 2 to 3% lower loss during carding and combing, much lower nep content, and much less fiber breakage. There is also a greater yield of clean wool from the solvent-degreasing method. 9 refs. (570)

FIELD TESTS ON SHEEP-BRANDING FLUIDS. C. C. Kritzinger and W. M. McHardy (South African Wool Textile Research Assoc.). J. Textile Inst. 51: T828-T840 (Dec. 1960).
A field study on a series of emulsion-type sheep-branding fluids has elucidated the role played by various factors which, in practice, affect the scourability and legibility of such fluids, and has shown that, in the preparation and testing thereof, due account must be taken of the effect of the type of wool on which the brand is put, the effect of time upon scourability and legibility, and the type of scouring solution used. (571)

RADIOACTIVE SOAP AS A MEANS OF STUDYING THE RINSING OF SOAP FROM WOOL. M. Robinet and J. Roussel (Ecole Supériere des Textiles). J. Textile Inst. 51: T1147-T1161 (Dec. 1960).
The removal of soap during the rinsing of wool has been measured using wool which has been washed with soap containing ^{14}C and ^{24}Na. Measurements of the radioactivity arising from these isotopes have permitted their removal to be followed and, up to a certain point, have even allowed their position in the fiber to be located, a result which has also been attempted by autoradiographic methods. 17 refs. (572)

OPEN-WIDTH WOOL AND WORSTED CLOTH PROCESSING. F. Smith & Co. Dyer 124: 955, 957 (Dec. 16, 1960).
Advantages and features of the Express scouring and washing machine are cited. (573)

SHRINKPROOFING OF WOOL WITH POLYGLYCINE FROM THE POLYMERIZATION OF ANHYDROCARBOXYGLYCINE. J. H. Bradbury and D. C. Shaw (C.S.I.R.O.). Textile Research J. 30: 976-982 (Dec. 1960).
Shrinkproofing of wool with anhydrocarboxyglycine can be achieved using 2% anhydrocarboxyglycine on the weight of the wool at 50° for 1 hr in water-washed white spirit or trichloroethylene. The polymerization, initiated by water present in the wool, produces polyglycine with a degree of polymerization (DP_n) about 30. Descaling of treated fibers shows that all the polyglycine is located in the outside 10% by weight of the fiber; a surface layer can be seen by Sellotape microscopy and electron microscopy. 22 refs. (574)

COATING OF FABRICS WITH PVC. E. H. Mattinson (Gourock Ropework Co. Ltd). J. Textile Inst. 51: P690-P698 (Dec. 1960).
This paper is concerned with the production of polyvinyl chloride coated materials based on woven fabrics and suitable for a certain range of industrial fabrics, i.e. tarpaulins, awnings, tentage, ventilation ducting, etc. The difficulties involved in the coating of fabrics, the properties that are required in them, and the design of suitable base materials for the particular range of materials discussed are covered. (575)

REMOVABILITY OF SIZES FROM COTTON GOODS. H. Felgentreff and B. Stieler. Z. ges. Textil-Ind. 62, No. 19: 844-849 (1960). In German. Through BCIRA 40: 4286 (1960).
The experiments described show that, in the case of swelling sizing agents, such as cellulose and starch ethers, it is not essential to remove 100% of the size from the fabric to obtain a satisfactory end-product. Thorough washing is generally sufficient; the minute traces remaining on the fabric do not affect the subsequent processing stages. (576)

MILDEWPROOFING OF COTTON WITH PENTACHLOROPHENOL AND LAURYLPENTACHLOROPHENOL. H. J. Hueck and J. LaBrijn. Textil-Rundschau 15, No. 9: 467-472 (1960). In German. Through BCIRA 40: 4311 (1960).
The two fungicides (PCP and LPCP) were used for heavy cotton fabrics and their effectiveness examined after a soil-burying test of 14 days and subsequent leaching. Good results were obtained with both fungicides at concentrations of 0.5%-2%. Water repellent agents appear to improve the mildew-resistance obtained by means of LPCP and to increase the resistance to leaching of PCP and LPCP. Fixation by an after-treatment with a copper salt gives good results even at a lower concentration of PCP. Previous scouring of the cotton to be proofed is not necessary. (577)

REMOVAL OF OIL FROM WOOL AND ITS RELATIONSHIP TO SURFACE STRUCTURE. J. C. Stewart (Unilever Ltd), and C. S. Whewell (Leeds Univ.). Textile Research J. 30: 912-918 (Dec. 1960).
The difficulty of removing oils from undamaged wool is attributed to its possessing an epicuticle which is mainly paraffinic in nature. Various treatments are carried out on wool; it is shown that there are direct relationships among the polarity of the wool surface, the ease of oil removal, and the degree of completeness of the epicuticle. Treatments which render wool easy to wash are considered to do so by removing the hydrophobic epicuticle, thereby exposing the underlying hydrophilic keratin. 29 refs. (578)

DRYCLEANING AND LAUNDERING OF TEXTILE MATERIALS. G. W. Sands (Can. Research Inst. Launderers & Cleaners). Can. Textile J. 78: 47-55 (Jan. 6, 1961).
The origin, growth, and progress of the laundering and cleaning industries are discussed, and current processing techniques are described, with emphasis on solvents, spotting, and pressing in drycleaning and types of soil, water, alkalis, and soaps in laundering. Sources of complaints and problems are discussed in detail. (579)

FASTNESS PROPERTIES OF THE UVITEX BRANDS. J. Lanter (Ciba Ltd). Ciba Rev. 12, No. 140: 33-34 (Oct. 1960).
The fastness properties of Uvitex brighteners to daylight, washing, chlorine, and to peroxide and chlorite bleaching are summarized. (580)

REMOVAL OF OILS FROM TEXTILE MATERIALS J. C. Stewart (Unilever Ltd), and C. S. Whewell (Leeds Univ.). Textile Research J. 30: 903-912 (Dec. 1960).
The influence of the textile substrate on the detergency process is investigated by straightforward oil removal evaluation in conjunction with contact angle measurements. Difficulty of oil removal is associated with matching of the polarities of oil and fiber which, since oils are at least moderately nonpolar, means that, in general, the more hydrophobic the fiber, the more difficult is oil removal. A general correlation found between detergency and contact angle measurements for liquid paraffin and olive oil implies the adequacy of the "rolling up" mechanism as a description of the detergency process for these oils on assemblies of loose fibers. Discrepancies in the case of two fibers are attributed to the effect of a "capillary displacement" mechanism. 30 refs. (581)

MASS TRANSFER AND THE WASHING PROCESS. J. Tuzson and B. A. Short (Whirlpool Research Labs.). Textile Research J. 30: 983-989 (Dec. 1960).
Published soil removal data suggest that the mass transfer process in a washing machine (transport of materials between cloth and bath) may influence or even dominate the soil removal process. Therefore, mass transfer was investigated in a small scale washer (Terg-O-Tometer). Actual experiments were conducted with water-soluble substances; their results support the theoretical developments set forward. The transfer coefficient is directly proportional to agitation speed and stroke angle, inversely proportional to the water-holding capacity of the cloth load, and independent of the bath volume. Finally the mass transfer process was compared in a full-size machine, a small commercial washer, and the test device by scale-up experiment. Good agreement was found, thus confirming the full-scale application of the results. 12 refs. (582)

FLUORESCENCE. Ciba Rev. 12, No. 140: 2-32 (Oct. 1960).
Luminescence in relation to organic compounds, by E. J. Bowen, p. 2-12; Fluorescent brighteners: a practical application of luminescence, by M. Dünnenberger, p. 13-17; Optical brighteners in textile finishing, by W. Geigy, p. 18-22; Some other uses of fluorescent brighteners, by G. Dürig, p. 23-25; Evaluation of whitening effect, and fastness testing of optically brightened textiles, by J. Lanter, p. 26-32. (583)

INTERFACIAL VISCOSITIES OF OIL/WATER SYSTEMS CONTAINING WOOL WAX AND ITS CONSTITUENTS. C. A. Anderson and E. V. Truter (Leeds Univ.). J. Textile Inst. 51: T884-T893 (Dec. 1960).
When wool wax and its constituents come into contact with aqueous solutions containing soaps or peptides, viscous interfacial layers may be formed. The significance of these films in the scouring of raw wool, and in the subsequent recovery of grease, is discussed. 11 refs. (584)

PEPTIDYL SHIFT DURING WOOL CARBONIZING. E. Hille and H. Zahn (Deutsches Wollforschungsinst.). J. Textile Inst. 51: T1162-T1167 (Dec. 1960).
Some chemical data on loose wool commercially carbonized were collected in the following steps of production: raw, scoured, baked, rinsed, neutralized, bleached. Part of the baked wool was additionally treated with buffer solutions of various pH values. It is recommended that carbonized wool should be completely neutralized and brought to a slightly alkaline condition to compare favorably with partly neutralized wool. 4 refs. (585)

POWER CONSUMPTION OF A TERG-O-TOMETER. J. Tuzson and B. A. Short (Whirlpool Research Labs.). Textile Research J. 30: 989-993 (Dec. 1960).

One of the most convenient means of running small-scale tests on washing or rinsing equipment is through the use of a commercially available test fixture called a Terg-O-Tometer. Unfortunately, however, this test fixture does not provide for measurement of the net power transmitted to the liquid bath. Since information on power input is vital to the proper evaluation of a cleaning process, a means was devised to directly measure this power input. The power input, characterized by the power number, was obtained for various Reynolds number values, where the Reynolds number was used as a measure of the speed and stroke angle variations. Information on power input versus water level variation and varying cloth load quantities was also obtained. In general, net power input increases with increasing water bath volume and increasing cloth-to-water ratio. 8 refs. (586)

WATERPROOFING PROBLEMS IN THE FINISHING OF VISCOSE STAPLE FIBERS. I. Kralik. Deut. Textiltech. 10, No. 9: 476-478 (1960). In German. Through BCIRA 40: 4310 (1960).

Problems associated with the textile raw material, yarn and fabric, preparation of the material, waterproofing finishes used, and impregnation, drying and condensation are reviewed. (587)

CERAN CS IN WATERPROOFING OF COTTON FABRICS. L. Las and Z. Rada. Textil 15, No. 8: 311-312 (1960). In Czech. Through BCIRA 40: 4309 (1960).

Optimum effects were obtained by using 10-20 g/l of the water repellent finish Ceran CS (Czech product based on the chromium complex of stearic acid). The finished cotton fabrics were tested both on the Penetrometer and on the Bundesmann apparatus. The addition of 10% hexamethylenetetramine protects the finished fabric against strength losses. (588)

APPLICATION OF THE DESCALING TECHNIQUE TO THE THEORY OF SHRINKPROOFING OF WOOL. J. H. Bradbury (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T1226-T1236 (Dec. 1960).

The present studies are concerned mainly with determining the chemical modification of the whole fiber and cuticle produced by degradative shrinkproofing treatments, with a view to a better understanding of the mechanism of shrinkproofing by these methods. It is found that the efficacy of shrinkproofing parallels the severity of surface modification observed by microscopy for all treatments in which there is little or no attack on the whole fiber. The other properties measured, e.g. loss of cystine in cuticle or whole fiber and frictional properties, show no correlation with the degree of shrinkproofing. 39 refs. (589)

EFFECT OF DIFFERENT METHODS OF DRYING IN HOME LAUNDERING ON THE STRENGTH OF MUSLIN SHEETING. D. Saville. J. Home Econ. 53: 35-38 (Jan. 1961).

Five drying methods were compared: automatic dryer, indoor line, outdoor sun 1-1/2 hr, outdoor shade 6 hr, and outdoor sun 6 hr. Drying in an automatic dryer and on an indoor line produced only a small loss in strength and in some cases a small gain fillingwise due to shrinkage. Loss of strength was much the same for the sun drying for 1-1/2 hr and the shade drying for 6 hr. More than twice as great a loss of strength occurred in the 6-hr sun drying as in the other two methods of outdoor drying. The reliability of the results as an index of serviceability is discussed. (590)

FORMATION OF SULFUR-CONTAINING COMPOUNDS IN WOOL DURING CARBONIZATION. N. La France, K. Ziegler, and H. Zahn (Deutsches Wollforschungsinst.). J. Textile Inst. 51: T1168-T1172 (Dec. 1960).

The increased cysteic acid content in carbonized, unbleached wool found by the method of low-voltage paper electrophoresis was investigated. The cysteic acid-containing zone is overlapped by a somewhat slower running ninhydrin-positive zone, which originates from a compound that was not expected in hydrolysates of wool. An explanation was found for the apparent increase of cysteic acid as well as for the origin of the unknown compound. 9 refs. (591)

SYNDET OR SOAP FOR ELASTIC FABRICS? D. Brockway, F. Turnbull, and M. Shigaya (Univ. Washington). J. Home Econ. 53: 32-34 (Jan. 1961).

Results of laundering tests on four types of power net showed no differences among the detergents tested in their effects on either resistance to stretch or dimensional stability of the elastic fabrics. All four types of elastic fabrics shrank during laundering. Although the analysis showed no significant loss in resistance to stretch during the launderings, further analysis revealed a significant interaction between fabrics and launderings, indicating that the four types of fabrics did not react in the same way. (592)

EFFECT OF HEATING WOOL CONTAINING ALKALI. G. P. Norton and C. H. Nicholls (Univ. New South Wales). J. Textile Inst. 51: T1183-T1192 (Dec. 1960).

The purpose of the present investigation was to ascertain the full extent of chemical changes occurring when wool is dried at elevated temperatures in an alkaline condition. One of the most significant effects of drying wool under these conditions is yellowing, and it is this aspect on which the initial investigations were concentrated. Factors which influence the extent of discoloration, methods of permanent removal and possible methods of prevention, and the nature of the chemical reactions involved were studied. 23 refs. (593)

CHEMICAL ACTION OF CARROTING AGENTS ON FUR. H. G. Fröhlich (Forschungsinstitut der Hutindustrie). J. Textile Inst. 51: T1237-T1246 (Dec. 1960).

The work described shows that the only chemicals that are effective as carroting agents are those which break the cystine linkages of rabbit hair. Experiments on uncarroted rabbit hair have shown definite differences between the tip and the shaft. These differences are further increased by the process of carroting. The frictional resistance of the carroted hair is increased and the work of extension is reduced. Determinations of the amine nitrogen show that there also takes place in carroting an N→O acyl transfer, similar to that shown by Zahn in carbonized wool. 15 refs. (594)

Dyeing and printing D2

SOLVENT-ASSISTED DYEING OF WOOL. E. M. Kärrholm (Swedish Inst. Textile Research). J. Textile Inst. 51: T1323-T1341 (Dec. 1960).

This paper describes an investigation of the influence of various factors on the dyeing rate of wool in the presence of alcohols or amines. The factors studied are the amount of absorption of some alcohols on wool, the acidity of the dye bath, the partition ratio for a dye between a solvent and buffer solution at high bath ratios, and various surface treatments. 16 refs. (595)

AFFINITY OF DISPERSE DYES FOR CELLULOSE ACETATE. C. L. Bird. Reply: E. H. Daruwalla, S. S. Rao, and B. D. Tilak. (Letters to the editor). J. Soc. Dyers Colourists 76: 680 (Dec. 1960).
See also abstr. 3589/60. (596)

CHANGE IN COLOR OF VAT DYES ON SOAPING. L. M. Golomb. Reply: J. Wegmann. (Letters to the editor). J. Soc. Dyers Colourists 76: 679-680 (Dec. 1960).
See also abstr. 2805/60. (597)

REACTIVE DYES TODAY. A. J. Hall. Textile World 111: 74-75, 78-84 (Jan. 1961).
The structure, properties, development of new types, possibilities in printing, and potential developments in reactive dyes. (598)

COLD PAD-BATCH METHOD: NEW PADDING PROCEDURE FOR CIBACRON DYES. M. Peter and P. Ulrich (Ciba Ltd). Ciba Rev. 12, No. 140: 39-40 (Oct. 1960). (599)

TWO-TONE EFFECTS ON WOOL BY A ONE-BATH METHOD. Ciba Ltd. Ciba Rev. 12, No. 140: 40-43 (Oct. 1960).
A novel dyeing system by which two-tone effects can be readily obtained on wool at every stage of processing--from loose stock to woven piece--without the assistance of special machines or operations is described. (600)

RECENT DEVELOPMENTS IN THE DYEING AND PRINTING OF DYNEL SYNTHETIC FIBER. D. J. McLeod (Union Carbide Canada Ltd). Can. Textile J. 77: 47-50 (Dec. 23, 1960).
The general characteristics of Dynel staple fibers are reviewed, and low temperature carrier procedures for printing Dynel pile fabrics and for stock dyeing Dynel staple fibers are described. (601)

SOME ASPECTS OF CARRIER DYEING. H. M. Friedman (Emkay Chem. Co.). Am. Dyestuff Reptr. 49: 946-951, 964 (Dec. 12, 1960).
The comparative carrier action in the dyeing of Dacron Type 54, Arnel, and Kodel with different types of commercial dye carriers was determined. The chemicals used in these commercial carriers were mixed in various combinations with an emulsifier base, Emkalar Base E-55, and the carrier action of these blends was also determined. Effect on shade depth of (1) carrier concentration in dyebath, and (2) variation in ratio of carrier chemical to emulsifier was observed. The potential savings available to the dyehouse using carrier chemicals of 100%-active concentration in combination with an emulsifier base, instead of prepared commercial carriers, is indicated. 11 refs. (602)

DYEING OF CRIMPED YARNS. H. Dittrich. Deut. Textiltech. 10, No. 9: 471-473 (1960). In German. Through BCIRA 40: 4298 (1960).
A simple process is described, in which the preparing yarn (intermediate crimping stage) is washed, fixed, and dyed in one operation at a temperature of 125° C for 10 min in a high temperature dyeing installation. The crimp remains thereby unchanged and is even improved. 30 refs. (603)

ENGLISH CONTRIBUTION TO THE EARLY HISTORY OF INDIGO PRINTING. P. R. Schwartz. (Letter to the editor). J. Soc. Dyers Colourists 76: 679 (Dec. 1960). (604)

USE OF REACTIVE DYES FOR DYEING WOOL AND WOOL UNIONS. H. R. Hadfield and D. R. Lemin (Imp. Chem. Inds. Ltd). J. Textile Inst. 51: T1351-T1370 (Dec. 1960).
The effect of dyebath pH on the hydrolysis, rate of reaction, and rate of exhaustion of Procion dyes on wool is discussed, and information is presented on the effect of fixation on fastness properties. The relation of these properties to the practical dyeing behavior of Procion dyes on wool is discussed, and optimum dyebath conditions are suggested. The application of Procion dyes to wool from dyebaths containing solvents both by batch-wise and continuous dyeing methods is outlined. The use of Procion dyes for the production of fast shades on the cellulosic portions of wool/cellulosic unions are described. 24 refs. (605)

AZOIC COMBINATIONS ON COTTON. P. J. Derwent (G. J. Vago & Son Pty. Ltd). Textile J. Australia 35: 654-658 (Aug. 20, 1960).
The basic principles of azoic dyeing and the more intricate details of azoic dyeing practice are covered. (606)

CONTINUOUS DYEING OF WOOL BY MEANS OF AN AQUEOUS TWO-PHASE SYSTEM: COACERVATION AS A NEW CONCEPT IN TEXTILE PROCESSING. R. Casty (Ciba Ltd). Am. Dyestuff Reptr. 49: 952-964 (Dec. 12, 1960).
The three steps comprising the procedure are described in detail: impregnation of the goods with the 2-phase system, preferably on a padding mangle; steaming of the impregnated material, which causes the dye to migrate into the interior of the fiber; and removal of unfixed dye, Cibaphasol C, and thickening by a thorough wash off. The results of the process are discussed. 7 refs. (607)

STUDIES ON THE DYEING OF DIFFICULT-DYEING FIBERS. PART 16. CONDENSATION DYES OF THIOINDOXYL-CARBOXYLIC-ACID-QUINONES. PART 17. CONDENSATION DYES OF THIOINDOXYL-CARBOXYLIC-ACID-ISATINS. K. Yamada. J. Soc. Textile Cellulose Inds. Japan 16, No. 9: 753-762 (1960). In Japanese (English summary). Through BCIRA 40: 4303 (1960).
The use of the dyes for dyeing synthetic fibers has been studied: the first have low lightfastness but the second are especially suitable for Saran and Farlon. (608)

COPPER TREATMENT OF DYED HALF-WOOLEN GOODS. B. Mihalek. Rayonne et Fibres Synthet. No. 8: 870-874 (1960). In French. Through BCIRA 40: 4304 (1960).
The experiments described were carried out on wool/spun rayon (50/50%) fabrics. The absorption of copper ions during the treatment of the dyed fabric with 2% of copper sulfate and 2% acetic acid for 60 min at various temperatures and the effect of temperature on the fastness properties of the dyeings were studied. The results are tabulated. (609)

DYEING IN THE ROPE AND ALLIED INDUSTRIES. M. A. Stone. Textile J. Australia 35: 911-912 (Oct. 20, 1960).
The dyeing properties of the raw materials used in the rope industry and dyeing practices are briefly summarized. (610)

EFFECT OF FLUORESCENT BRIGHTENING AGENTS ON THE LIGHTFASTNESS OF DYED CELLULOSE. C. H. Giles and S. M. K. Rahman. (Letter to the editor). J. Soc. Dyers Colourists 76: 681 (Dec. 1960). (611)

MECHANISM OF DYEING WITH PROCION DYES. PART 1. MECHANISM OF ALKALI ADSORPTION BY CELLULOSE. H. H. Sumner (Imp. Chem. Inds. Ltd). J. Soc. Dyers Colourists 76: 672-678 (Dec. 1960).

A brief historical survey is given of previous work on the mechanism of adsorption of alkali by cellulose, in which three possibilities are considered: adsorption, because the hydroxyl ion has affinity for cellulose; compound formation between alkali and cellulose; and neutralization of the alkali by the cellulose acting as a weak acid. Using the third mechanism, the amount of sodium hydroxide that will be adsorbed from alkaline baths by both viscose rayon and cotton is predicted. The way in which this treatment enables affinities to be calculated for adsorption of dye from aqueous alkaline dyebaths is discussed; and it is shown how the concept of ionized cellulose hydroxyl groups, produced by neutralization of alkali by the fiber, provides a mechanism for dyeing with reactive dyes. 25 refs. (612)

WOOL SURFACE PROPERTIES AND THEIR INFLUENCE ON DYE UPTAKE: MICROSCOPICAL STUDY. V. Köpke and B. Nilssen (Norwegian Textile Research Inst.). J. Textile Inst. 51: T1398-T1413 (Dec. 1960).

A microscopical technique was employed to localize and to identify the variations in the rate of dyeing between different wool fibers as well as between parts of the same fiber. Dyed fibers were examined visually and in cross-section. By modifying the surface of the wool fibers by chemical and/or physical means the causes of the variations in the rate of dyeing have been investigated. Two retarding mechanisms influencing the rate of dyeing were considered, one of an apparently mechanical kind and one of a chemical nature. 23 refs. (613)

LIGHTFASTNESS OF DYESTUFFS ON TEXTILES. A. GETTING BEST RESULTS THROUGH OPTIMUM DYEING METHODS. B. ACCURATE EVALUATION THROUGH PROPER LIGHT TEST PROCEDURES. C. H. A. Schmitt (Sandoz, Inc.). Am. Dyestuff Reptr. 49: P974-P980 (Dec. 12, 1960).

Factors involved in achieving optimum lightfastness and factors which contribute to good and bad results in both daylight and Fade-Ometer testing, as well as the use of the Weather-Ometer and the new humidifier-type Fade-Ometer for duplicating Florida sun tests, are reviewed. 13 refs. (614)

NEW FABRIC PRINTING TECHNIQUE. RESINLESS EMULSIONS. B. Jomain. Teintex 25, No. 9: 632-644 (1960). In French. Through BCIRA 40: 4307 (1960).

Discoveries made in the field of resinless emulsions and printing processes, introduced during the past 2 years (based on oil-in-water and water-in-oil emulsions, respectively), are reviewed and preparation, storage, and uses of the emulsions in roller and screen printing, as well as treatment and appearance of the printed fabric, are discussed. (615)

ADSORPTION OF NONIONIC DYES BY WOOL. C. L. Bird and J. M. Firth (Leeds Univ.). J. Textile Inst. 51: T1342-T1350 (Dec. 1960).

The affinity for wool of a series of nonionic dyes based on azobenzene was determined. Nonionic dyes were found to have low affinity for wool and, consequently, low fiber saturation values. 15 refs. (616)

PRINTING PERLON-HELANCA SWIMSUIT MATERIAL WITH CIBACRON DYES. A. Schaub (Ciba Ltd). Ciba Rev. 12, No. 140: 43 (Oct. 1960). (617)

LIGHTFASTNESS AND SURFACE ACTIVITY OF DYES: EFFECT OF ALKYLATION AND OF SULFONATION. C. H. Giles, G. Baxter, W. A. Black, N. Macaulay, and S. M. K. Rahman (Royal Coll. Sci. & Technol., Glasgow). Textile Research J. 30: 934-943 (Dec. 1960).

Systematic changes in lightfastness produced by alteration of surface activity in several series of dyes of the sulfonated anthraquinone, sulfonated and unsulfonated azo, azomethin, and merocyanine classes are described. A marked increase in surface activity of an ionic dye tends to decrease lightfastness in normal substrates. A smaller increase in surface-activity, e.g. by introduction of a short alkyl chain, usually increases lightfastness. The orientation and number of sulfonate groups affects lightfastness. A more even distribution of such groups or increase in their number in the dye molecule improves the fastness; this rule appears to apply to most acid wool dyes. The effect of normal aggregation of the dyes in the substrate upon their lightfastness is apparently in most cases sufficient to mask differences in their chemical reactivity. The lower the solubility of a dye in a film before setting, the higher is its lightfastness; the higher the solubility, the lower the lightfastness. When dyes are entirely molecularly dispersed, e.g. those in a homologous merocyanine series used here, in collodion, even quite marked changes in length of an attached alkyl chain have almost no effect on fastness. 17 refs. (618)

ACRYLIC FIBER WITH BUILT-IN COLOR. Chemstrand Corp. Skinner's Silk & Rayon Record 34: 1172-1174 (Dec. 1960).

Colorfastness data on Colourspun Acrilan to light, washing, fresh and sea water, and rubbing is summarized in table form. Swatches. (619)

INFLUENCE OF THE NEWER FIBERS ON BEAM DYEING TECHNIQUES. P. J. Dolby (Imp. Chem. Inds. Ltd). Dyer 124: 1017-1019 (Dec. 30, 1960).

The principles, machine operation, dyeing procedures, and advantages of beam dyeing are briefly summarized. (620)

Drying, setting, conditioning D4

HOT-AIR DRYING: EFFECT OF TEMPERATURE AND HUMIDITY. P. Wadsworth (Brit. Cotton Ind. Research Assoc.). Textile Merc. 143: 866-868, 876 (Dec. 23, 1960). (621)

ECONOMY AND CONTROL IN HEAT SETTING. Dyer 124: 849-850 (Dec. 2, 1960).

An oil-fired indirect heating system serving a battery of pin tenters is described. (622)

TESTING AND MEASUREMENT E

Fibers E1

QUANTITATIVE ANALYSIS OF BINARY FIBER MIXTURES CONTAINING COURTELLE (ACRYLIC FIBER). W. Armfield (Courtaulds Ltd). J. Textile Inst. 51: P699-P705 (Dec. 1960).

The analytical procedure described is satisfactory for mixtures of Courtelle with silk, cotton, wool, nylon 66 (polyamide), Terylene (polyester), or Fibro (viscose rayon). Courtelle is dissolved from the mixture with dimethylformamide at 60° C or, in special cases, at 90° C. The method is applicable also to other acrylic fibers except for basified acrylics dyed with chromed acid dyes. (623)

APPLICATION OF MICROSCOPICAL TECHNIQUES TO THE EVALUATION OF EXPERIMENTAL FIBERS. M. C. Botty, C. D. Felton, and R. E. Anderson (Am. Cyanamid Co.). Textile Research J. 30: 959-965 (Dec. 1960).
Three experimental acrylic fibers were characterized by a variety of microscopical methods and by microradiography in order to correlate their microstructures with measured physical properties and to help explain certain test results. By establishment of a relationship of optical appearances to physical properties for these fibers, future experimental fibers of similar composition could be evaluated and their behavior predicted by comparatively rapid optical methods. 8 refs. (624)

INFRARED SPECTROSCOPY OF FIBER-FORMING HIGH POLYMERS. C. Ruscher and R. Schmolke. Faserforsch. u. Textiltech. 11, No. 8: 383-387 (1960). In German. Through BCIRA 40: 4345 (1960).
In this review the authors discuss special methods of infrared spectroscopy, especially embedding methods, film preparation, and studies on unchanged fibers. Dichroic investigations are also described, with special reference to a simple method of producing infrared polarizers. The publications cited refer to infrared spectroscopy in general, to cellulose, polyamide, polyacrylonitrile, polyvinyl chloride/polyvinylidene chloride, and polyvinyl alcohol fibers, and to infrared polarizers. 221 refs. (625)

STUDY OF SOME PROBLEMS IN PROTEIN CHEMISTRY USING NEW (NON-HYDROLYTIC) METHODS FOR THE DETERMINATION OF THIOL AND DISULFIDE. J. A. Maclaren, S. J. Leach, and J. M. Swan (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T665-T677 (Dec. 1960).
Present methods for estimating SS and SH groups in insoluble proteins are reviewed and new non-hydrolytic methods are described. These analytical techniques have been applied to the analysis of keratins, irradiated wool, and oxidized wool. The principles underlying these new methods have been applied to the study of disulfide-splitting reactions, to the preparation of wools in which the SH and SS groups have been specifically and completely removed, and to the labeling of proteins with heavy atoms at the SH and SS residues. 56 refs. (626)

FIBER DAMAGE BY MICROBIOLOGICAL ATTACK. G. Raes (Univ. Ghent). Intern. Rev. Cotton Allied Textile Inds. 28: 311-314 (Dec. 1960).
The alkali centrifuge value method for determining the presence and degree of degradation in cotton fibers is described. (627)

FIBER ALIGNMENT DEVICE. M. E. Hourihan, H. G. Neil, H. D. Wood, Jr., and C. E. Terrill. (Letter to the editor). Textile Research J. 30: 1004-1006 (Dec. 1960).
Data on obtaining the diameter of wool fibers by the use of a fiber alignment device developed by the Special Instruments Laboratory are presented. 6 refs. (628)

PRESSURE CORING OF BALED WOOL. H. W. Lunney. Textile J. Australia 35: 662-664 (Aug. 20, 1960).
The new technique, developed by CSIRO, enables good samples to be taken quickly and easily from bales of either greasy or scoured wool. (629)

MEASUREMENT OF COMPRESSIONAL CHARACTERISTICS OF FIBER ASSEMBLIES. H. Terasaki, Y. Sakata, and Y. Katagiri. J. Soc. Textile Cellulose Inds. Japan 16, No. 9: 701-705 (1960). In Japanese (English summary). Through BCIRA 40: 4347 (1960).
The effects of measuring conditions (sampling, deformation speed, compression load, etc.) were studied (cylindrical fiber assembly of viscose rayon staple; table-type Instron tester). The relation between the compressed height (Y) and the compression load (Z) is expressed by $\log Y = A + B \log Z$. Blending of rayon staple with cotton increases bulkiness as the amount of rayon staple is increased up to 30%. (630)

Yarns E2

PART 1. CRITICAL STUDY OF THE KIVELIOVICH/VIALAR TESTS AND THEIR USES IN TEXTILE ANALYSIS. A. Arano and A. Barella. PART 2. IRREGULARITY AND RANDOM TESTS. A. Arano. Investigacion e Informacion Textil 3, No. 2: 87-99 (1960). In Spanish. Through BCIRA 40: 4355 (1960).
Part 1. Some new criteria for determining the randomness of chronological series are discussed, with special reference to the recently published work of Kiveliovich and Vialar. Part 2. It is shown that the random tests are more suitable for analyzing irregularity than the present methods which consider only the transverse distribution. In order to simplify these random tests, an abbreviated test is proposed and an attempt is made to apply it to successive-sample systems with increasing length so as to obtain an irregularity spectrum. Details of the analysis and an example of its application to yarn from bobbins are given. (631)

FORCE OF HABIT: SOME GOOD ADVICE. K. Hentschel. Melliand 41, No. 4: 231 (1960).
An argument for the adoption of the tex system. (632)

MILL MANAGEMENT F

SOME ASPECTS OF CONTRACTS OF SALE. I. H. Jacob. J. Textile Inst. 51: P636-P647 (Nov. 1960).
Some of the legal aspects in Great Britain concerning the description, fitness, and quality of goods forming the subject matter of contracts of sale are discussed. (633)

Industrial engineering F1

CLASSIFYING MAINTENANCE. C. B. Hart (Chatham Mfg. Co.). Textile Inds. 125: 49-51 (Jan. 1961).
The description of job classifications used at Chatham indicates a way that management's questions may be answered in justifying expenditures and activities of the maintenance department. (634)

TAKE ANOTHER LOOK AT AUTOMATIC DATA PROCESSING. F. H. Drewes. Textile Inds. 125: 58-61 (Jan. 1961).
Results of a survey of 5255 companies, including 55 textile installations, are summarized to indicate why an automatic accounting system saves money for some and is inadvisable for others. (635)

ELECTRONIC DATA PROCESSING. Am. Textile Reptr. 75: 17-19, 45-46 (Jan. 19, 1961).
Advantages of automatic data processing and the trend to its use in the textile industry are discussed. (636)

ECONOMICAL DYEHOUSE MANAGEMENT. H. R. Bush. Dyer 124: 917-920 (Dec. 16, 1960).
Suggestions for controlling overhead and labor costs. (637)

INDUSTRIAL ENGINEER'S POSITION IN MODERN TEXTILE MANAGEMENT. W. F. Robertson (Riegel Textile Corp.). Proc. So. Textile Methods Standards Assoc.: 31-38 (Fall 1959/Spring 1960). (638)

SOME REFLECTIONS ON COST ACCOUNTING IN TEXTILE INDUSTRY. M. B. Umarwadia. Indian Textile J. 70: 643-647 (Sept. 1960).
Methods of calculating costs for weaving, spinning, dyeing, bleaching, packaging, overhead, engineering, and raw materials are briefly reviewed. (639)

INTRODUCTION TO OPERATIONS RESEARCH THEORY AND APPLICATION OF LINEAR PROGRAMMING AND RELATIONSHIP TO OTHER INDUSTRIAL ENGINEERING TECHNIQUES. J. J. Wilkinson and W. F. Hyde (H. B. Maynard & Co.). Proc. So. Textile Methods Standards Assoc.: 39-46 (Fall 1959/Spring 1960).
Areas where operations research techniques are being used are outlined. Some literature which the authors passed out at the STMSA meeting is reproduced: Diagrams of a typical production problem; and a reprint from Business Week, May 30, 1953, Top Management by Mathematics. The following passouts, which were also part of the presentation, are reproduced in the Fall Proceedings, 1960: reprint from J. Ind. Eng., Jan.-Feb. 1956, Better Management = Management + Industrial Engineering + Linear Programming, by J. J. Wilkinson; reprint from Am. Machinist, April 11, 1955, Linear Programming, by R. W. Ferguson. (640)

NEW HORIZONS IN MATERIALS HANDLING: AUTOMATION. S. R. Brookshire. Proc. So. Textile Methods Standards Assoc.: 24-29 (Fall 1959/Spring 1960). (641)

HOW TEXTILE MILLS BUY CAPITAL EQUIPMENT. Daily News Record. Fairchild Publications, 7 East 12 St., New York 3, N.Y. 1960. 56 p.
Profiles of 12 leading textile mills, including their machinery buying practices and the men who are normally involved. (642)

QUALITY CONTROL IN SPINNING MILLS: OUTLINE OF A PROGRAM. U. Bhattacharya. Textile Dig. 21: 63-78 (Apr.-June 1960).
Outline of a general program of testing and sampling techniques, accompanied by a brief discussion on the desirability of such tests. 25 refs. (643)

Plant and equipment F2

ELECTRONIC AIR CLEANERS. W. J. Ortman (Minneapolis-Honeywell Regulator Co.). Textile Inds. 125: 72-74 (Jan. 1961).
The benefits resulting from the installation of electronic air cleaners in the Bloomsburg Mills' Lock Haven plant are discussed. (644)

DELTA VERSUS WYE ELECTRICAL DISTRIBUTION SYSTEMS. Textile World 111: 44-45 (Jan. 1961).
The major factors to be considered in deciding between a Delta or a Wye electrical distribution system for textile mill power are discussed. (645)

HOW TO BAN FIRES IN YOUR MILL. S. Cowan. Textile World 111: 46-49 (Jan. 1961).
The causes of five electrical textile mill fires, as well as the results of a survey on fire losses in textile mills, are described. Recommended practices for fire prevention are outlined. (646)

ELECTRIC POWER IN TEXTILES: 1961. Textile World 111: 32-40 (Jan. 1961).
This survey of management and practices in the use of electric power in textile mills summarizes the replies of management men and specialists in 98 textile-producing units to a Textile World questionnaire. Reprints are available at 35¢ a copy from Textile World, Reader Service Dept., 330 W. 42nd St., New York 36, N.Y. (647)

ADVANTAGES OF USING STATISTICAL METHODS FOR ESTABLISHING OPTIMUM PACKAGE SIZES IN TEXTILE MANUFACTURING. K. K. Edgar (Lindsay & Michaels, Inc.). Proc. So. Textile Methods Standards Assoc.: 18-22 (Fall 1959/Spring 1960). (648)

TECHNICAL DEVELOPMENTS IN BRITISH EQUIPMENT DURING 1960. Textile Weekly 60 (2): 1499-1507 (Dec. 23, 1960). (649)

MACHINERY DEVELOPMENTS IN 1960. Textile Weekly 60 (2): 1558-1560 (Dec. 30, 1960). (650)

LANSHIELD SAKAPHEN COATINGS IN THE TEXTILE INDUSTRY. E. Wilford. Dyer 124: 957, 959 (Dec. 16, 1960).
Applications and advantages of the different types of these corrosion resistant coatings are briefly reviewed. (651)

CENTRIFUGAL CLUTCH: AN APPROVED DRIVING ELEMENT IN THE TEXTILE INDUSTRY. F. Eberbach. Textil-Praxis (English ed.) No. 3: 104-108 (Oct. 1960).
The use of centrifugal clutches in squirrel cage type induction motors for ensuring smooth starts is discussed. (652)

SOVIET TEXTILE INDUSTRY. PART 1. AUTOMATIC PRODUCTION IN COTTON SPINNING. PART 2. FULLY-AUTOMATIC FINISHING FOR COTTON CLOTH. Guardian: 13 (Sept. 27, 1960); 16 (Sept. 28, 1960). Summary in BCIRA 40: 3848 (1960).
The development of automatic production lines is reported. (653)

AIR CONDITIONING AND DUST REMOVING SYSTEMS IN THE TEXTILE INDUSTRY. E. Hablützel (Winterthur Coll. Technol.). Swiss Tech. No. 3: 53-61 (1960).
The problems involved and the methods available for dust removal in the preliminary stages of fiber processing, humidity and temperature control in spinning, twisting, and weaving, and denebulizing in the finishing stages are discussed. (654)

MEASURING AND TESTING EQUIPMENT FOR THE TEXTILE INDUSTRY. H. C. Sulser (Rüti). Swiss Tech. No. 3: 31-40 (1960).
Swiss instruments used in the textile industry are described under these headings: production control, output control, and quality control. (655)

HUMIDITY CONTROL IN JUTE MILLS. D. Mukherjee. Textile Dig. 19: 103-105 (Apr.-June 1958). (656)

MACHINE CALENDER ROLL CROWNS AND PRESSURE DISTRIBUTIONS. J. W. Riese. Tappi 43: 1034-1040 (Dec. 1960).
This paper presents a general mathematical approach to methods for calculating roll crowns to obtain uniform nip pressures or a known pressure distribution. 10 refs. (657)

SCIENCES G

Chemistry G1

ABSORPTION OF ACIDS BY WOOL FROM SOLUTIONS CONTAINING ORGANIC SOLVENTS. PART 1. ABSORPTION OF HYDROCHLORIC ACID FROM AQUEOUS SOLUTIONS OF METHANOL AND OF DIOXAN. P. Larose and R. Donovan (Can. Nat. Research Coun.). J. Textile Inst. 51: T1302-T1310 (Dec. 1960).
The titration curves were found to be similar to those obtained with aqueous solutions of hydrochloric acid, but were displaced with respect to the latter a distance which depends apparently on the change of the dissociation constant of the carboxyl group caused by the change of medium. With certain limitations, the shape of the titration curves can be explained either by the Gilbert and Rideal theory or by the application of the Donnan equilibrium theory. 23 refs. (658)

GENERALIZED THEORY FOR THE COMBINATION OF ACID OR ALKALI WITH WOOL KERATIN. L. Peters (Leeds Univ.). J. Textile Inst. 51: T1290-T1301 (Dec. 1960).
A generalized Donnan theory is developed to describe the titration curve of an insoluble protein which possesses unequal numbers of carboxyl and amino groups. The equations derived apply to combination with acid or alkali and include a treatment of the isoelectric point. From the constancy of the isoelectric pH of keratin it is concluded that K^+ and Cl^- do not combine with keratin. 12 refs. (659)

RELATIONSHIP BETWEEN CROSS-LINKING IN LINCOLN WOOL AND UREA-BISULFITE SOLUBILITY, SWELLING RATIO AND YOUNG'S MODULUS. J. C. Atkinson and P. T. Speakman (Leeds Univ.). J. Textile Inst. 51: T726-T739 (Dec. 1960).
The degree of cross-linking can be estimated via the urea-bisulfite solubility after the alkali treatment, or the loss of cystine during the treatment. The possession of such a means of controlling the degree of cross-linking in fibrous proteins made it attractive to examine two physical properties of cross-linked wool (swelling and Young's modulus) and their relation to the degree of cross-linking. 16 refs. (660)

SOLUBILITY OF WOOL IN UREA-BISULFITE SOLUTIONS AND ITS USE AS A MEASURE OF FIBER MODIFICATION. PART 2. K. Lees, R. V. Peryman, and F. F. Elsworth (Wool Inds. Research Assoc.). J. Textile Inst. 51: T717-T725 (Dec. 1960).
Results are given showing the effect of dyeing treatment, setting, dry heat, and exposure to light on the urea-bisulfite solubility of wool. The effect of alkaline treatment on urea-bisulfite solubility has been further examined and related to changes in lanthionine sulfur content and in rate of dyeing. 19 refs. (661)

ROLE OF SH GROUPS IN WOOL. H. Zahn, F.-W. Kunitz, and D. Hildebrand (Deutsches Wollforschungsinstitut). J. Textile Inst. 51: T740-T752 (Dec. 1960).
The purpose of this investigation is to compare the RS-dependent decrease in the urea-bisulfite solubility of reduced and alkali-treated wool and lanthionine formation and to find a relation between lanthionine formation and SH-content of wool. 31 refs. (662)

PREPARATION AND PROPERTIES OF WOOL PROTEINS. J. M. Gillespie, I. J. O'Donnell, E. O. P. Thompson, and E. F. Woods (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T703-T716 (Dec. 1960).
Attempts to produce and characterize the polypeptide fractions of wool are summarized. 74 refs. (663)

SOME OBSERVATIONS ON THE DEGRADATION OF CYSTINE IN ETHYLAMINE SOLUTION. R. L. Elliott, R. S. Asquith, and M. A. Hobson (Bradford Inst. Technol.). J. Textile Inst. 51: T692-T702 (Dec. 1960).
A study has been made of the changes in cystine and cysteine contents of mixtures of cystine and cysteine in boiling ethylamine, and the nature of the reaction products examined. On the basis of these findings it is suggested that the decomposition of cystine in alkali occurs, to some extent, through the breakdown of cysteine and the subsequent reduction of cystine. 14 refs. (664)

REACTIVITY OF N-MERCAPTOMETHYLPOLYHEXAMETHYLENEADIPAMIDE DISULFIDE COMPARED WITH THAT OF WOOL KERATIN. C. Earland and D. J. Raven (Bradford Inst. Technol.). J. Textile Inst. 51: T678-T691 (Dec. 1960).
Since the disulfide of N-mercaptomethylpolyhexamethyleneadipamide (N-mercaptomethyl-6.6 disulfide) has a structure similar to that accepted for keratin in that the $-CH_2SSCH_2-$group forms a bridge between long-chain polyamide molecules, its reactions have been investigated with particular emphasis on the use of reagents which react with the disulfide cross-linkage of keratin. The relation of these reactions to various aspects of wool chemistry is explained. 16 refs. (665)

EFFECT OF ALKALINE TREATMENT ON WOOL SOLUBILITY. J. M. Swan (C.S.I.R.O. Wool Research Labs.). (Communication). J. Textile Inst. 51: T752-T755 (Dec. 1960).
The author examines the lanthionine hypothesis as an explanation of the reduced solubility of wool. 6 refs. (666)

THERMODYNAMIC FUNCTIONS OF A REVERSIBLY CONTRACTILE β-KERATOSE FIBER. P. T. Speakman (Leeds Univ.). J. Textile Inst. 51: T792-T796 (Dec. 1960).
A β-keratose fiber, prepared by oxidizing a purified horse hair and extracting the α- and γ-keratoses with ammonia solution, is used for the investigation of the thermodynamic functions of configurational changes in proteins. 8 refs. (667)

THERMODYNAMIC PROPERTIES OF DILUTE SOLUTIONS OF CELLULOSE DERIVATIVES. W. R. Moore (Bradford Inst. Technol.). Textile Research J. 30: 965-976 (Dec. 1960).
Values of the free energies, heats, and entropies of dilution are given for dilute solutions of cellulose acetates, cellulose nitrate, and ethyl cellulose in representative solvents. 35 refs. (668)

EFFECTS OF CHEMICAL MODIFICATIONS ON THE PHYSICAL PROPERTIES OF WOOL: A MODEL OF THE WOOL FIBER. W. G. Crewther and L. M. Dowling (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T775-T791 (Dec. 1960).
Evidence is presented that the rate of supercontraction in solutions of LiBr is partly determined by interchange reactions between sulfydryl and disulfide groups and that inhibition of supercontraction when free bromine is present in the solutions of LiBr is due to oxidation of the sulfydryl groups. It is concluded that the contractile structures of the fiber are not cross-linked by disulfide bonds, but are embedded in material containing inter- and intra-molecular disulfide bonds (the matrix), the rate of plastic deformation of the latter structure being affected by sulfydryl interchange with disulfide bonds. 40 refs. (669)

BASIC PEPTIDES FROM α-KERATOSE. M. Fell, N. H. La France, and K. Ziegler (Deutsches Wollforschungsinstitut). J. Textile Inst. 51: T797-T805 (Dec. 1960).
A tryptic hydrolysate of α-keratose from wool was divided into acidic, neutral, and basic peptides by an ion-exchange resin column technique and high-voltage paper electrophoresis. The basic peptides were separated and tested for homogeneity by means of electrophoresis and chromatography. 9 refs. (670)

SOME OBSERVATIONS ON THE OXIDATIVE DEGRADATION OF THE PROTEIN CHAINS OF WOOL. H. P. Lundgren (Western Reg. Research Lab.). J. Textile Inst. 51: T806-T816 (Dec. 1960).
A useful index of the resistance of the protein chains of wool to oxidative degradation is described. The method involves the measurement of time to break specimen wool fibers, yarn, or fabric exposed to an oxidizing solution, in this case, of sodium hypochlorite. The time to break is shortened when the fibers are pretreated with fine particles of carbon or clay, providing the fibers are swelled sufficiently when the particles are applied. 22 refs. (671)

INVESTIGATION OF THE SULFUR COMPOUNDS IN ACID HYDROLYSATES OF WOOL. B. Lewis, A. Robson, and E. M. Tiler (Wool Inds. Research Assoc.). J. Textile Inst. 51: T653-T664 (Dec. 1960).
Seven ^{35}S-labeled compounds, in addition to ^{35}S-methionine and ^{35}S-cystine, have been found in hydrolysates of ^{35}S-labeled wool by starch chromatography, and four of these gave the characteristic blue color by the Shinohara disulfide reaction. 26 refs. (672)

CHAIN CONFORMATION OF POLYPROPYLENES HAVING A REGULAR STRUCTURE. G. Natta, P. Corradini, and P. Ganis. Makromol. Chem. 39, No. 3: 238-242 (1960). Through BCIRA 40: 4412 (1960).
An attempt is made to predict the possible chain conformations of isotactic and syndiotactic polypropylenes and to compare them with known ones. The calculations are based on two postulates for defining the most probable chain conformation of a tactic polymer in the crystalline state: (1) geometric equivalence of the monomeric units of a tactic chain with regard to an axis and (2) minimum potential energy of the chain not subjected to external forces. (673)

CHARACTERIZATION OF THE CORTICAL STRUCTURES OF KERATIN FIBERS BY UREA-BISULFITE SOLUBILITY. J. H. Dusenbury (Textile Research Inst.). J. Textile Inst. 51: T756-T774 (Dec. 1960). (674)

ACRYLONITRILE-STABILIZED WOOL KERATIN DERIVATIVES. PART 2. DEVELOPMENT OF A REPRODUCIBLE PREPARATION FROM CORTICAL CELL RESIDUES. J. J. Bartulovich, Y. Tomimatsu, and W. H. Ward (Western Reg. Lab.). J. Textile Inst. 51: T628-T636 (Dec. 1960).
This research has been undertaken to characterize normal and degraded wool components. Reduction with mercaptoethanol followed by alkylation with acrylonitrile was used to separate and stabilize the protein chains. This paper attempts to define the molecular weight and chemical properties of the acid-precipitable fraction. 15 refs. (675)

NEW REACTIONS IN REDUCED WOOL FIBERS. A. Schöberl (Chem. Inst. Tierärztlichen Hochschule). J. Textile Inst. 51: T613-T627 (Dec. 1960).
The reactivity of the ·SH-groups of reduced wool (i.e. ·SH-wool) towards 3 classes of substance was studied: certain alkylating agents (in particular vinyl sulfones); thiosulfinic acid esters; and alkyl thiosulfates and polymethylene dithiosulfates. The chemical modification process and the alteration in properties of the wool fiber caused thereby are discussed. 18 refs. (676)

α→β TRANSFORMATION IN KERATIN. A. Skertchly and H. J. Woods (Leeds Univ.). J. Textile Inst. 51: T517-T527 (Dec. 1960).
The configuration of the polypeptide chains in α-keratin and the course of the α→β transformation as it is brought about by stretching the fiber are discussed. 8 refs. (677)

INVESTIGATIONS ON CRYSTALLOGRAPHIC CHANGES OCCURRING IN WOOL KERATIN DURING CHEMICAL MODIFICATION, WITH PARTICULAR REFERENCE TO FINISHING PROCESSES. A. Skertchly (Leeds Univ.). J. Textile Inst. 51: T528-T543 (Dec. 1960).
The details of a new type of x-ray diffractometer designed to investigate rapidly possible changes in the configuration of the wool keratin crystal lattice during periods of perturbation are briefly described. Consideration is given to practical and theoretical limitations of the method and to the degree of correlation to be expected with results obtained from other techniques. The stability of the native and modified keratin lattice is investigated. Finishing treatments, of the urea-reducer type, which impart permanent set, do not appear to influence markedly the stability of the crystalline helical component in the keratin complex. 21 refs. (678)

SYNTHETIC POLYPEPTIDES AND PROTEINS. C. H. Bamford (Courtaulds Research Lab.). J. Textile Inst. 51: T1527-T1538 (Dec. 1960).
This paper is mainly (but not entirely) a report of recent investigations on synthetic polypeptides intended to extend our knowledge of the α-helix. 35 refs. (679)

ULTRAVIOLET ABSORPTION SPECTRUM OF SOLID KERATIN. E. G. Bendit (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T544-T561 (Dec. 1960).
A technique has been developed for determining the ultraviolet absorption spectrum of native keratin in the form of thin longitudinal sections of horsehair, using a standard spectrophotometer with only minor modifications. The results include spectra of stretched specimens, of specimens immersed in aqueous solutions at different pH and in various swelling agents, spectra obtained with polarized light, difference spectra, and spectra of specimens damaged by ultraviolet irradiation and alkali treatment. 33 refs. (680)

SULFUR-CONTAINING COMPOUNDS: NOMENCLATURE. F. O. Howitt. J. Textile Inst. 51: T651-T652 (Dec. 1960).
A system of nomenclature that should at least partly cover the specific requirements of the keratin chemist is proposed. (681)

STRUCTURE OF GLOBULAR PROTEINS. J. C. Kendrew (Cavendish Lab.). J. Textile Inst. 51: T1517-T1519 (Dec. 1960). (682)

OXIDATIVE INSOLUBILIZATION OF PROTEINS. C. Earland, J. G. P. Stell, and A. Wiseman (Bradford Inst. Technol.). J. Textile Inst. 51: T817-T827 (Dec. 1960).
The coloration of proteins, e.g. wool and silk, after oxidation has been associated with protein insolubilization. It is considered that the insolubility on oxidation is probably due to cross-links of a melanin-type structure, derived from tyrosine residues. Further information has been obtained from the reactions of potassium nitroso disulfonate, which oxidizes phenols quantitatively to quinones, and which has been used for the first time to oxidize proteins. 21 refs. (683)

STRUCTURAL COMPARISON OF FILMS REGENERATED FROM CELLULOSE ACETATE AND VISCOSE. V. C. Haskell and D. K. Owens (E. I. du Pont de Nemours & Co.). Textile Research J. 30: 993-998 (Dec. 1960).
Cellulose films having radically different physical properties were prepared by the standard viscose process and by the deacetylation of commercial cellulose acetate film. These films were characterized by x-ray, acid hydrolysis, differential swelling in caustic, and light and electron microscopy of freshly torn edges. Measurements by x-ray and acid hydrolysis reveal that the film from cellulose acetate has less crystalline material and smaller crystallite size than the viscose film. By differential swelling in caustic the film from cellulose acetate was shown to have less highly ordered material than the viscose film. Light and electron microscopy of freshly torn edges of the two films reveal a common structural element. Fibrils were seen, the size of which did not vary appreciably between the two films. The arrangement of the fibrils in the internal structure of the films was markedly different. By considering the data obtained from these different sources, an explanation of the property difference and its relation to fine structure can be postulated. 7 refs. (684)

X-RAY AND ELECTRON MICROSCOPE STUDIES OF THE STAINING OF KERATIN BY SILVER. J. Sikorski and H. J. Woods (Leeds Univ.). J. Textile Inst. 51: T506-T516 (Dec. 1960).
The x-ray diffraction of reduced Lincoln wool fibers containing silver is analyzed. Both silver and mercury were taken up by the microfibrils as well as by the matrix, and neither appears to be a specific stain for sulfur. 12 refs. (685)

SETTING PROPERTIES OF KERATIN FIBERS IN RELATION TO STRUCTURE. J. L. Stoves (C. W. Martin & Sons Ltd). J. Textile Inst. 51: T603-T612 (Dec. 1960).
Earlier work on the setting of skunk guard-hairs in borax has been extended to fibers from six other mammals with a view to obtaining further information on problems of structure and reactivity. No direct relationship was found to exist between the physicochemical properties studied and the gross histological structure of the fibers as estimated by the cuticle/cortex/medulla ratio. 14 refs. (686)

BIOLOGICAL DEGRADATION OF CELLULOSE. J. A. Gascoigne and M. M. Gascoigne (Brit. Rayon Research Assoc.). Butterworths, London. 1960. 264 p. Available from Butterworth Inc., 7235 Wisconsin Ave., Washington 14, D.C. $8.00.
The aim of the book is to deal with enzymic processes, rather than to describe the effects of microorganisms and their prevention. Contents: The chemistry and physics of cellulose; Enzymes involved in reactions of β-linked glycosides; Sources of cellulases; Purification of cellulases; Properties of cellulolytic enzymes; Mode of action of cellulolytic enzymes; Hemicellulases; Industrial significance of cellulases. Extensive references. (687)

DEGREE OF POLYMERIZATION AND ITS DISTRIBUTION IN CELLULOSE RAYONS. PART 10. QUANTITATIVE THEORY OF THE TENACITY AND BREAKING EXTENSION OF REGENERATED CELLULOSE MONOFILAMENTS. R. J. E. Cumberbirch and C. Mack (Shirley Inst.). J. Textile Inst. 51: T458-T483 (Nov. 1960).
The paper describes a simplified model structure for cellulose regenerated from secondary cellulose acetate. From this model structure theoretical relations of breaking strength and breaking extension to degree of polymerization (DP) are derived and are shown to agree well with experimental results. The fitting of these relations enables estimates to be made of crystallite size and of percentage crystallinity. These estimates are in good agreement with the experimentally obtained values. It is also shown that a negligible fall in DP can be expected to occur on the mechanical rupture of a filament. 26 refs. (688)

RECENT OBSERVATIONS ON THE STRUCTURE OF α-KERATIN. R. D. B. Fraser, T. P. MacRae, and G. E. Rogers (Leeds Univ.). J. Textile Inst. 51: T497-T505 (Dec. 1960).
A further study of the structural organization in α-keratin has been made by examining the effect on the x-ray diffraction pattern of human hair after reaction with heavy atoms. It has been found that many of these features can be explained in terms of the nature and perfection of the microfibril packing. It is concluded that in many instances the heavy atoms are deposited in discrete and regularly arranged sites in the crystalline regions of the structure. 12 refs. (689)

DIFFUSION OF SOME SULFONIC ACIDS IN KERATIN IN THE PRESENCE OF WATER AND ALCOHOLS. J. A. Medley and D. K. Ramsden (Wool Inds. Research Assoc.). J. Textile Inst. 51: T1311-T1322 (Dec. 1960).
In order to obtain additional information on the diffusion mechanism of organic ions in keratin and its relationship to solvent assisted dyeing of wool, the transfer rates of a series of alkylbenzene-sulfonate ions between aqueous solutions and horn keratin have been measured by radio-tracer techniques. The rates are increased by the addition of n-propanol and n-butanol to the external solutions, the effect being greater for the larger alkyl groups and for higher concentrations of ion in the keratin. Evidence is presented that transfer rates are governed by Fickian diffusion within the keratin. 14 refs. (690)

COMMENT ON THE FRINGED FIBRIL THEORY OF STRUCTURE IN CRYSTALLINE POLYMERS. R. I. C. Michie, A. Sharples, and R. J. E. Cumberbirch. (Letter to the editor). J. Polymer Sci. 42: 580-581 (1960).
12 refs. (691)

STRESS CHANGES AT CONSTANT STRAIN AND HYDROGEN BONDING IN KERATIN FIBERS. A. R. Haly and M. Feughelman (C.S.I.R.O. Wool Research Labs.). J. Textile Inst. 51: T573-T588 (Dec. 1960).
When a keratin fiber is extended in water, held, and dried, a stress develops in the fiber. This stress is minimal for an extension of approximately 2%. The strain dependence of developed stress, and some properties of fibers at strains in the region of 2%, are discussed in terms of postulated hydrogen-bond formations. Data are included on swelling, on deuterium for hydrogen exchange in strained fibers, on recovery of length, and on attempts to determine stress against strain curves under conditions in which fiber regain remained constant while the curves were determined. 12 refs. (692)

POLYMERIZATION. F. H. Bolton (Dow Chem. Co.). Ind. Eng. Chem. 53, No. 1: 79-81 (Jan. 1961).
Review of advances in 1959. 131 refs. (693)

POLYMERIZATION: AN I/EC UNIT PROCESSES REVIEW. F. H. Bolton (Dow Chem. Co.). Am. Chem. Soc., Wash. 1961. 37 p. Available from The Editor, Industrial and Engineering Chemistry, 1155 16th St. NW, Washington 6, D.C. $1.00.
This is the complete bibliography, together with tables, of the Unit Processes Review published in Ind. Eng. Chem. 53: 79-81 (Jan. 1961). See abstr. 693/61. (694)

Physics G2

THERMAL STABILITY, FLAMMABILITY, AND MELTING CHARACTERISTICS OF TEXTILE SUBSTRATES. I. M. Gottlieb and L. R. Beck, Jr. (Textile Research Inst.). Annals of N.Y. Academy of Sciences 82: 724-743 (Oct. 7, 1959).
The thermal behavior, flammability, and melting characteristics of 18 fiber types and 4 fabrics coated with various elastomers were studied. The effect of blending on fiber systems is also reported. 22 refs. (695)

FRICTION OF POLYMERS AND FIBERS: THE INFLUENCE OF SURFACE AND BULK PROPERTIES. D. Tabor (Cavendish Lab.). J. Textile Inst. 51: T1520-T1526 (Dec. 1960).
This survey will describe briefly the role played by surface properties and bulk properties in the friction of polymeric materials. The experiments on which this account is based have been concerned largely with synthetic polymers, but some of the broad conclusions are probably equally applicable to the behavior of wool. (696)

Biology G3

MICROBIOLOGICAL TRANSFORMATIONS OF THE STEROIDS OF WOOL WAX. D. Pedder and E. V. Truter (Leeds Univ.). J. Textile Inst. 51: T876-T883 (Dec. 1960).
The essential preliminary step in the conversion of cholesterol to hormones is the degradation of the long side-chain. This process is extremely inefficient when carried out chemically, and is the main reason that cholesterol is not used more extensively. This paper describes an attempt to find an alternative, enzymatic method of degradation which would give higher yields of useful material. Although the object has not been achieved, the results of this study provide a rational basis for further attacks on the problem. 20 refs. (697)

BACTERIAL DISCOLORATION OF WOOL. I. E. B. Fraser and E. V. Truter (Leeds Univ.). J. Textile Inst. 51: T857-T862 (Dec. 1960).
The factors that might explain why only some wools are stained green by the bacterial metabolite pyocyanin have been investigated. Bacteriological and other experiments have shown that there are no differences between the normal fleece constituents of immune and susceptible sheep. It is concluded that discoloration will occur only if the fleece contains adventitious bacterial nutrients which arise through damage to the hypersensitive skins of susceptible sheep. 8 refs. (698)

MISCELLANY H

BRITISH NYLON INDUSTRIAL CONVENTION, PARK LANE HOUSE, LONDON, 25TH AND 26TH MAY, 1960. Nylon Outlook 3, No. 2: 46-50 (Autumn 1960). (699)

RESEARCH FOR INDUSTRY 1959. Gt. Brit. Dept. of Scientific & Industrial Research. London. 1960. 126 p. Available from British Information Services, 30 Rockefeller Plaza, New York 30, N.Y. $1.15.
A report on work done by industrial research associations in the British government scheme. Includes information on income, scope of present work, and publications. (700)

HIGHLIGHTS OF THE PAST YEAR. P. J. Wood (Royce Chem. Co.). Am. Dyestuff Reptr. 49: 968-971, 993-995 (Dec. 12, 1960).
Developments in heat setting, drying, dyeing and finishing machinery, and laboratory apparatus and instruments are briefly reviewed. (701)

WASH-AND-WEAR: WHAT'S AHEAD? J. L. Williams and F. A. McCord (Nat. Cotton Coun.). Textile Inds. 125: 66-68, 91 (Jan. 1961).
Summary of the results of a survey on easy care cottons covering the questions of: extent of consumer demand; requirements; advantages and disadvantages; current status; problems; and future demand. See also abstr. 5005/60. (702)

TEXTILE SCIENCE: AN INTRODUCTORY MANUAL. 4th (rev.) impression. J. T. Marsh. Chapman & Hall, London. 1958. 391 p. $5.10.
Part 1. Textile fibers. Part 2. Yarns and fabrics. Part 3. Bleaching, dyeing, and printing. Part 4. Finishing. Bibliography, p. 382-386. The book was originally published in 1948. Some new developments in synthetic fibers, dyeing, and finishing are included in this edition. (703)

SECOND INTERNATIONAL WOOL TEXTILE RESEARCH CONFERENCE. F. O. Howitt (Wool Inds. Research Assoc.). J. Textile Inst. 51: P681-P690 (Dec. 1960).
The main purpose of this article is to give a general picture of the nature and scope of the papers presented at the Conference. The papers themselves are printed in the Transactions of the Journal of the Textile Institute for December 1960. (704)

TEXTILE AND ALLIED INDUSTRIES RESEARCH ORGANIZATION, BARODA: SIX-YEAR SURVEY OF ACTIVITIES. Indian Textile J. 71: 18-22 (Oct. 1960). (705)

PATENT CHECKLIST

U.S. patents may be obtained from the U.S. Patent Office, Washington 25, D.C., for 25¢ a copy. Photostatic copies of foreign patents are also available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

Natural fibers A1

AUTOMATIC CONTROL OF GIN FRONT POSITION. D. D. Day (to Murray Co. of Texas). USP 2 962 769, Dec. 6, 1960. (706)

COTTON BALING PRESS. D. W. Van Doorn and W. C. Pease, III (to Lummus Cotton Gin Co.). USP 2 963 959, Dec. 13, 1960. (707)

Manmade fibers A2

PILL RESISTANT LINEAR CONDENSATION POLYMER FIBER WITH INDENTED CROSS-SECTION. R. A. Craig (to E. I. du Pont de Nemours & Co.). USP 2 959 839, Nov. 15, 1960. (708)

IMPROVING THE MECHANICAL AND DYEING PROPERTIES OF POLYVINYL ALCOHOL FIBERS. T. Osugi, K. Tanabe, and Y. Ohno (to Kurashiki Rayon Co. Ltd and Air Reduction Co.). USP 2 960 384, Nov. 15, 1960.
Polyvinyl alcohol fibers which combine improved dyeability with heat resistance are produced by reacting the fibers with an aminoaldehyde or acetal derivative thereof. (709)

VISCOSE MODIFICATION FOR IMPROVED FATIGUE RESISTANCE. N. L. Cox (to E. I. du Pont de Nemours & Co.). USP 2 962 341, Nov. 29, 1960.
The primary swelling of gel filaments from viscose is reduced by the addition of selected ether ethanols to the spinning bath with a resultant improvement in fatigue resistance of filaments and yarns. (710)

PROCESS OF PRODUCING ALL-SKIN VISCOSE RAYON. B. A. Thumm (to Am. Viscose Corp.). USP 2 962 342, Nov. 29, 1960.
The addition of alkali-soluble alkylene oxide adducts of castor oil, hydrogenated castor oil, or mixtures of the aforementioned oils to the spinning bath results in filaments consisting entirely of skin. (711)

YARN PRODUCTION B

AQUEOUS EMULSION OF COLLOIDAL SILICA AND OIL FOR INCREASING INTERFIBER FRICTION IN WOOL MATERIALS. E. J. Shepherd (to Monsanto Chemicals Ltd). BP 842 027, July 20, 1960. (Addition to BP 840 372). Summary in BCIRA 40: 4219 (1960). (712)

APPARATUS FOR CUTTING TERYLENE FILAMENTS INTO STAPLE FIBERS. W. Liddell and I. S. Hudson (to Imp. Chem. Inds. Ltd). BP 842 554, July 27, 1960. Summary in BCIRA 40: 4182 (1960). (713)

PRODUCTION OF STAPLE YARNS FROM CONTINUOUS FILAMENTS. R. J. Summers (to T. M. M. (Research) Ltd). BP 843 283, Aug. 4, 1960. Through BCIRA 40: 4237 (1960).
A tow is fed continuously through first and second pairs of rollers, heavily pressed together, the second pair rotating at a higher speed and thus causing a ratching effect. Between these two pairs is an intermediate pair or a roller and apron system, working at an intermediate speed, to forward the tow. The tow may be flattened or spread, e.g. by means of a bladed beater wheel or a knife-edge device, before it is fed to the first pair of rollers. (714)

APPARATUS FOR CONTINUOUSLY PRODUCING AND PACKAGING STRIPS OF WADDING OR COTTON WOOL. Intern. Bandage Co. BP 843 631, Aug. 4, 1960. Summary in BCIRA 40: 4225 (1960). (715)

APPARATUS FOR THE LIQUID TREATMENT OF ARTIFICIAL THREADS. Lustrafil Ltd. BP 844 934, Aug. 17, 1960. Through BCIRA 40: 4447 (1960).
The thread travels in a series of spaced helical loops around a pair of inclined rollers, one above the other. At least the lower roller has a series of lengthwise grooves that change to helical grooves as the final drying zone is approached. The hand of these helical stretches and the direction of rotation of the rollers are such as to drive washing water back away from the drying zone. (716)

CONDITIONING AGENT FOR HYDROPHOBIC CELLULOSIC DERIVATIVES. H. H. Hall (to Am. Viscose Corp.). USP 2 956 950, Oct. 18, 1960.
Oil base finish for acetate yarns comprises mineral oil, an oil-insoluble antistatic agent, and a coupling agent for making the antistatic agent oil-dispersible. (717)

THERMOPLASTIC YARN HEAT STRETCHING DEVICE. B. L. Powers and K. M. Schmidt (to North Am. Rayon Corp.). USP 2 962 793, Dec. 6, 1960. (718)

FALSE TWIST CRIMPING APPARATUS. D. Finlayson and R. W. Fearn (to Brit. Celanese Ltd). USP 2 963 848, Dec. 13, 1960.
Means for guiding a number of separate strands into frictional contact with a false twist spindle to twist them together, setting the temporary twist, and separating the strands. (719)

Opening, picking, fiber preparation B1

LAP WINDING APPARATUS FOR PICKER MACHINES. J. R. Long (to Livingston & Haven Inc.). BP 841 491, July 13, 1960. Through BCIRA 40: 4222 (1960).
Means for automatically releasing the pressure to opposite ends of the usual lap roller or pin when the machine stops so that the lap can be removed readily. (720)

COTTON HOPPER FEEDER. T. W. Owen (to Brit. Cotton Ind. Research Assoc.). BP 841 559, July 20, 1960. Summary in BCIRA 40: 4220 (1960). (721)

Carding and combing B2

DETACHING ROLLER LOADING IN RECTILINEAR COMBING MACHINES. F. Talboys, H. Clayton, T. Meadowcroft, and J. Prophet (to T. M. M. (Research) Ltd). BP 841 432, July 13, 1960. Summary in BCIRA 40: 4227 (1960). (722)

RECTILINEAR COMBING MACHINES. T. H. Wright (to T. M. M. (Research) Ltd). BP 843 670, Aug. 10, 1960. Through BCIRA 40: 4228 (1960).
Means whereby the uncombed lap may be fed forward either during the forward swing of the nippers towards the detaching rollers or on the return swing. (723)

CARD CLOTHING. L. C. Laroche. BP 844 579, Aug. 17, 1960. Through BCIRA 40: 4470 (1960).
The teeth are U-shaped, preferably with a semi-circular base and are embedded up to the two limbs in a hardenable plastic above which comes the conventional support up to the knee bends. The plastic is set by baking and may contain conducting material to discharge static. (724)

MOVABLE CARRIAGE TRAVEL REVERSING MECHANISM FOR CROSSER LAPPERS. R. C. Draving and R. K. Ward (to Proctor-Silex Corp.). USP 2 962 772, Dec. 6, 1960. (725)

APPARATUS FOR CONTINUOUS PRODUCTION OF JUTE SLIVERS IN A CARDING SET. H. B. Riehl and E. M. Hyde (to Proctor-Silex Corp.). USP 2 964 801, Dec. 20, 1960.
Carding set with a weighing feed mechanism for a breaker card, intermediate feed mechanism for delivering lap to a finisher card, and can coilers for receiving the finished sliver which is suitable for spinning without repeated doublings and draftings. (726)

CONTINUOUS PRODUCTION OF SLIVERS FROM FIBERS. H. Aono and H. Isono (to Toyo Boseki KK and Howa Kogyo KK). USP 2 964 802, Dec. 20, 1960.
System for automatically producing slivers from fibers without the use of a picker. The opened and blended fibers are pneumatically fed to a condenser-hopper-feeder combination connected to carding machines by means of a main rake distributor in the form of an endless lattice conveyor equipped with carrier pins. (727)

PNEUMATIC TEXTILE CARD CLEANERS. P. Schönenberger (to Pneumafil Corp.). USP 2 964 804, Dec. 20, 1960. (728)

Drawing and roving B3

DRAFTING APRON TENSIONING DEVICE. W. Hampl (to Spintex Spinnerei-Maschinenbau GmbH). BP 841 583, July 20, 1960. Summary in BCIRA 40: 4232 (1960). (729)

SLIVER DRAFTING. S. Robinson (England). USP 2 964 803, Dec. 20, 1960.
Arrangement in which the relative speeds of the drafting rolls are controlled by electrical means in accordance with variations in weight or thickness of the sliver. (730)

APPARATUS FOR THE BACK MOTION OF THE CONE DRUM BELT IN A FLYER FRAME. Howa Kogyo KK. BP 842 472, July 27, 1960. Summary in BCIRA 40: 4234 (1960). (731)

SLIVER CONVEYING APPARATUS. Kammgarnspinnerei Kaiserslautern. BP 842 750, July 27, 1960. Through BCIRA 40: 4229 (1960).
Apparatus for conveying sliver from one processing machine to another in a continuous manner by depositing the sliver in piles of zig-zag folds at the inlet side of a processing machine as it is fed from the preceding machine. (732)

DRAFTING FRAME ROLLER SYSTEM FOR RAYON STAPLE FIBER. F. Andrews and H. Taylor (to Brit. Rayon Research Assoc.). BP 843 130, Aug. 4, 1960. (Addition to BP 753 534). Summary in BCIRA 40: 4233 (1960). (733)

REINFORCED ENDLESS RUBBER BELTS OR BANDS FOR DRAFTING APRONS. M. Balkin and D. G. Turner (to G. Angus & Co. Ltd). BP 843 461, Aug. 4, 1960. Through BCIRA 40: 4231 (1960).
A mandrel is coated with a layer of plastic rubber of the desired thickness and covered with helical windings of a cord so that these cut into and become embedded in the rubber. The vulcanized product is claimed for use in fiber drafting agents and the detailed description envisages this application. (734)

ROLLER BEARING FOR SHELL-TYPE TOP DRAFTING ROLL. G. B. Ingraham (to Saco-Lowell Shops). USP 2 962 770, Dec. 6, 1960. (735)

CROSS WINDING APPARATUS FOR DRAWING FRAMES. G. Werner (to Hanseatische Motoren-GmbH). USP 2 964 898, Dec. 20, 1960.
Means for imparting a false twist to the sliver in production of cross windings during drawing. (736)

Spinning, winding, twisting B4

BRAKES FOR SPINNING AND TWISTING SPINDLES. J. J. Rieter & Cie AG. BP 841 593, July 20, 1960. Summary in BCIRA 40: 4235 (1960). (737)

FALSE TWISTING MACHINE. A. Dobson (to E. Scragg & Sons Ltd). BP 842 463, July 27, 1960. Through BCIRA 40: 4244 (1960).
At least two yarns are drawn from packages, passed simultaneously through a single, heated, false-twist tube in opposite directions so that they receive opposite twists, and then wound together as a single yarn. (738)

TWISTING DEVICE FOR MANUFACTURING TIRE CORD. H. V. Jansen (to NV Kunstzijdespinnerij Nyma). BP 842 553, July 27, 1960. Through BCIRA 40: 4240 (1960).
The separate elements are individually twisted and then run together to a cap twister where they are reverse-twisted into a cord. (739)

RING TWISTING APPARATUS. W. Bakker (to Am. Enka Corp.). USP 2 964 897, Dec. 20, 1960.
Depressible ring holder for forming transfer tails outside the area of a yarn collecting tube which is normally occupied by the yarn package. (740)

RING TWISTING FRAMES. Barmer Maschinenfabrik AG. BP 842 569, July 27, 1960. Through BCIRA 40: 4239 (1960).
The invention provides for the winding of yarn that is not fully drawn (e.g. after a bobbin change or a pieceup) on a reserve bobbin for rejection as waste, and also for the creation of a transfer tail. (741)

COMBINATION OF A TAPE CONDENSER OF A CARDING ENGINE, A BOBBIN FRAME, AND ROVING GUIDES. Spinnbau GmbH. BP 843 518, Aug. 4, 1960. Through BCIRA 40: 4224 (1960).
Arrangement by which, without making a bobbin frame wider than the condenser card, it is possible to divide the roving windings in more suitable ways for feeding to the drafting mechanism of fine spinning frames. A set of roving guides is used between the rubbing leathers and winding rollers, increasing progressively in length towards the rollers, so that a bobbin length longer than the width of the condenser is permissible as a compact arrangement. (742)

CENTRIFUGAL CAN SPINNING FRAMES. A. Gardella and C. Gardella. BP 844 527, Aug. 10, 1960. Through BCIRA 40: 4236 (1960).
Twisting or spinning is automatically restarted after breakage by the use of rotatable thread guide for inserting a pre-twist into the sliver or yarn before it reaches the can. (743)

BOBBIN HANDLING ARRANGEMENT. R. M. Ingham, Jr. (to Deering Milliken Research Corp.). USP 2 962 856, Dec. 6, 1960.
Holding and ejecting arrangement for overhead donning of bobbins from a carrier onto a spinning frame spindle. (744)

TRANSPORTING DEVICE FOR FILLED BOBBINS. J. Geiger (to Vereinigte Glanzstoff Fabriken AG). USP 2 963 182, Dec. 6, 1960.
The wound bobbins are placed directly on racks running on rolls which engage rails provided in a transfer truck. The truck transfers the rack directly to a dustproof container. (745)

CLEARER FOR TOP DRAFTING ROLLS. W. Naegeli (to J. J. Rieter & Co. Ltd). USP 2 964 806, Dec. 20, 1960.
Wiper blade which rests on the lower drafting roll so that the torque imparted to the blade by the frictional engagement between the blade and the lower drafting roll gently presses the blade against the top roll. (746)

SPINNING RING WICK ASSEMBLY. A. J. Wayson and A. G. Bucchiarari (to Merriman Bros.). USP 2 964 899, Dec. 20, 1960.
Band for securely holding the wick in a ring groove with the wick ends extending from the side of the band at one position so that they may be directed through the hole of the surrounding holder to lie in an oil supply. (747)

Yarns B5

PRODUCTION OF BULK VISCOSE YARNS. H. L. Martyn (to Courtaulds Ltd). BP 842 762, July 27, 1960. Through BCIRA 40: 4245 (1960).
A bundle of viscose filaments is fed into a zone of turbulent steam and withdrawn at a rate less than the feed rate. (748)

POLYVINYL CHLORIDE IMPREGNATED BELTING. R. S. Goy (to Dunlop Rubber Co. Ltd). BP 843 464, Aug. 4, 1960. (Addition to BP 809 322). Through BCIRA 40: 4241 (1960).
Reinforcing yarns are made by core-spinning staple fiber on continuous-filament yarn, e.g. combed Egyptian cotton on Terylene or nylon. The core yarns may be doubled and cabled, used as warp with nylon weft, and the fabric impregnated with a flexible polyvinyl composition. (749)

APPARATUS FOR PRODUCING BULK VISCOSE YARN. Algemene Kunstzijde Unie NV. BP 844 502, Aug. 10, 1960. Through BCIRA 40: 4246 (1960).
A viscose yarn of at least 300 filaments and total denier at least 500 is stretched at least 90% in a second bath, then bulked by the known air blast method, subjected to the usual aftertreatments and dried, in one continuous process. (750)

METALLIC YARN. B. J. Rosenblatt (to Standard Yarn Mills). USP 2 963 850, Dec. 13, 1960.
The yarn is spun from individually twisted metal staples coated on at least one of their faces with a non-metallic coating. (751)

NYLON TIRE CORD PACKAGE. E. T. Lessig and M. W. Wilson (to B. F. Goodrich Co.). USP 2 964 262, Dec. 13, 1960.
Twisted nylon filaments are moistened with a wetting agent, twisted together to form a cord, and wound on a tube or cone for use in a creel. (752)

NOVELTY COMBINATION YARNS OF STAPLE FIBERS AND FILAMENTS TWISTED TOGETHER. J. W. Hicks, Jr. (to Deering Milliken Research Corp.). USP 2 964 900, Dec. 20, 1960. (753)

FABRIC PRODUCTION C

Warping, slashing, yarn preparation C1

APPARATUS FOR WINDING CROSS-WOUND BOBBINS. H. Brütting and M. Kränzel (to VEB Spinn- und Zwirnerei Maschinenbau). BP 841 618, July 20, 1960. Through BCIRA 40: 4260 (1960).
The winding spindle and its bobbin come within the supply package and an ungulate guide member is mounted on the carrier of the package with its oblique end adjacent to the bobbin so that the point of takeoff of the yarn from the package and the point of contact with the oblique end of the guide run concentrically. (754)

TENSION CONTROL MEANS FOR COP WINDING FRAMES. Barmer Maschinenfabrik AG. BP 841 645, July 20, 1960. Through BCIRA 40: 4262 (1960).
An endless elastic belt travels around two rollers on fixed axes, one replacing the whorl of the winding spindle. The belt bears against a rotating disc also mounted on the driving shaft. A pivoted rocker arm explores the tension in a loop of the yarn and shifts the elastic belt in accordance with fluctuations in tension. (755)

WINDING ARRANGEMENT FOR SPINNING, TWISTING, AND WINDING MACHINES. Barmer Maschinenfabrik AG. BP 842 838, July 27, 1960. (Addition to BP 820 640). Through BCIRA 40: 4263 (1960).
Control of driving motor speed in accordance with fluctuations in yarn tension. (756)

RECIPROCATORY YARN GUIDE FOR WINDING MACHINES. F. Ridgway (to Arundel, Coulthard & Co. Ltd). BP 842 774, July 27, 1960. Summary in BCIRA 40: 4264 (1960). (757)

MECHANISM FOR WINDING WEFT BOBBINS AND AUTOMATICALLY DELIVERING THE WOUND BOBBINS INTO HOLDERS. Maschinenfabrik Rüti AG. BP 842 880, July 27, 1960. Summary in BCIRA 40: 4265 (1960). (758)

YARN DETECTING STOP MECHANISMS. J. P. Mackie (to J. Mackie & Sons Ltd). BP 842 972, Aug. 4, 1960. (Addition to BP 732 549). Through BCIRA 40: 4266 (1960).
Stop motions for use where yarn is forwarded continuously or intermittently, that depend on the tripping of a pivoted detector when the yarn fails. (759)

BEAM WINDING APPARATUS. Gebrüder Sucker GmbH. BP 842 984, Aug. 4, 1960. Through BCIRA 40: 4267 (1960).
In winding bands of yarn on a beam at constant speed, control is effected when variations occur between the feeding and winding speeds, as detected by a roller in a loop of the yarn, by producing pneumatic, hydraulic or electrical pulse-like signals, a characteristic value of which is adjustable in dependence on the extent of the variations, and utilizing the signals to correct the drive. (760)

SIZING AGENT FOR SYNTHETIC FILAMENTS. Farbenfabriken Bayer AG. BP 843 185, Aug. 4, 1960. Through BCIRA 40: 4269 (1960).
The size is a benzine solution of a copolymer of the type produced from octadecyl mono-maleate dodecyl methacrylate and styrene. (761)

WARP BEAM PACKING. G. W. Schofield (to Brit. Nylon Spinners Ltd). BP 844 417, Aug. 10, 1960. Through BCIRA 40: 4268 (1960).
The yarn is protected by a sheet of polythene, secured at the ends of the beam by adhesive tape, and then by a wrapping of corrugated fiberboard. The beam is then surrounded by a cylindrical or polygonal casing of galvanized mild-steel sheet or double-faced corrugated fiberboard having wooden flanges. The flanges have end plates which are bolted to the ends of the beam within. (762)

SLASHERS. W. L. Freeze (to Cocker Mach. & Foundry Co.). USP 2 963 767, Dec. 13, 1960.
Support for takeup beams which can be adjusted to accommodate beams of various widths without disconnecting the beam driving heads. (763)

PIVOTABLE BRACKET FOR BLADE-TYPE SLUB CATCHERS. A. A. Brame and B. R. Lyon, Jr. (to Brame Textile Mach. Co.). USP 2 963 768, Dec. 13, 1960.
The bracket permits the slub catcher to pivot freely between limits in response to lateral deviations of linear yarn travel. (764)

TRAVERSE MECHANISM FOR YARN WINDING MACHINE. A. Edelman and G. E. Koslow (to Celanese Corp.). USP 2 964 260, Dec. 13, 1960.
The mechanism is actuated by a linear polyphase motor to which are connected coils which produce a moving magnetic field in which the armature is positioned and by which it is moved. (765)

SLUB CATCHER. S. L. Abbott (to Abbott Mach. Co.). USP 2 963 769, Dec. 13, 1960.
Means for distinguishing between slubs and knots or nibs and for returning the latter to the normal yarn path. (766)

MEANS FOR DETERMINING THE PROCESSING QUALITIES OF SIZING MATERIAL. H. Kabelitz (to Gebruder Sucker GmbH). USP 2 963 905, Dec. 13, 1960.
By measuring the adhesive force produced by the size in the form of a tear-off or rupture force. (767)

BOBBIN WINDING FRAMES. C.-G. Rosenkranz and W. Schwarzwälder (to Firma Halstenbach & Co.). USP 2 964 254, Dec. 13, 1960.
Guide device for holding the yarn end against the bobbin tube so that the initial winding holds the end securely by overlapping. (768)

TRAVERSE MECHANISM FOR WINDING FLAT EXTRUDED PLASTIC YARN. A. J. Hambach and J. Van Caneghem (to Horace L. Smith, Jr., Inc.). USP 2 964 261, Dec. 13, 1960. (769)

SQUEEZE ROLL APPARATUS FOR WET PROCESSING. J. Cocker, III (to Cocker Mach. & Foundry Co.). USP 2 964 825, Dec. 20, 1960.
Squeeze roll arrangement whereby liquids may be removed by subjecting the textile to drain sizing, dress sizing, or slop sizing in a variety of combinations or sequences without effecting a major change in the construction of the apparatus. (770)

BRAKE SYSTEM FOR SLASHING APPARATUS. N. E. Klein, C. D. Lucas, and G. A. Mobley (to Deering Milliken Research Corp.). USP 2 964 826, Dec. 20, 1960.
Hydraulic system responsive to letoff tension variations in the warp. (771)

CONTINUOUS BEAMING APPARATUS. G. T. Lindstrom and D. P. MacMurray (to E. I. du Pont de Nemours & Co.). USP 2 964 827, Dec. 20, 1960. (772)

YARN DEFECT DETECTOR. D. L. Sharps (to E. I. du Pont de Nemours & Co.). USP 2 964 828, Dec. 20, 1960.
Self-threading clearer and inspection device sensitive to fused sections of melt-spun filaments. (773)

TRAVERSE MECHANISM FOR CONE WINDING MACHINE. L. J. R. Wiering (to NV Hollandse Signaalapparaten). USP 2 965 322, Dec. 20, 1960. (774)

AUTOMATIC DISK TENSION DEVICE FOR YARN. W. L. Perry (to Abbott Mach. Co.). USP 2 965 332, Dec. 20, 1960. (775)

TRAVERSE MECHANISM FOR AUTOMATIC WINDING MECHANISM. R. W. Scott. USP 2 965 333, Dec. 20, 1960. (776)

WATER SOLUBLE VINYLALKOXYSILANE COMPOSITIONS FOR SIZING GLASS FIBERS. M. H. Jellinek (to Union Carbide Corp.). USP 2 965 515, Dec. 20, 1960. (777)

Weaving C2

HARNESS CONSTRUCTION PRODUCING INTERNAL SELVAGES ON WOVEN FABRICS. J. M. Crook. BP 842 469, July 27, 1960. Summary in BCIRA 40: 4274 (1960). (778)

REED WIRE SPACING. J. Cottam and A. Huntington (to Amalgamated Cotton Mills Trust Ltd). BP 842 486, July 27, 1960. Through BCIRA 40: 4275 (1960).
The dents at each end are spaced apart by nylon, Terylene, or resin-impregnated thread or cord wound over flat strips and made rigid by coating the ends (e.g. by dipping) with thermosetting resin, or enclosed by resin layers or laminates to form the baulk. The reeds thus avoid the use of pitch and are as rigid as reeds in which the dents are soldered to a screw-threaded rod, but much simpler. (779)

LOOM ACCESSORY CARRIER. Sulzer Frères SA. BP 842 818, July 27, 1960. Through BCIRA 40: 4273 (1960).
In looms carrying auxiliary tools that can slide between the working position and a resting position on a reciprocating carrier controlled by guides, means for replacing the tools without dismantling parts of their drives or having to adjust them. (780)

TUFT YARN SPOOL AND TUBE CARRIER FRAMES FOR WEAVING AXMINSTER CARPETS. Nat. Provincial Bank Ltd. BP 843 222, Aug. 4, 1960. Summary in BCIRA 40: 4277 (1960). (781)

WARP TENSION DEVICE FOR WEAVING MULTIPLE PLY FABRICS. K. Metzler (Germany). BP 843 608, Aug. 4, 1960. Summary in BCIRA 40: 4272 (1960). (782)

PHOTOELECTRIC WEFT YARN DETECTOR. R. Taylor and G. Bampfield. BP 844 322, Aug. 10, 1960. Through BCIRA 40: 4276 (1960).
The device for detecting shortage of weft in weaving differs from known types in not requiring a switch to prevent the operation of the stop motion when the shuttle is not in its box. The beam of light is directed towards the position occupied by the shuttle in the box and then deflected by a prism on the shuttle, so that the beam actually passes on to the detector through the position normally occupied by weft in the shuttle. (783)

STEEL WIRE HEDDLE. P. Ramseier (to Bracker AG). USP 2 964 066, Dec. 13, 1960.
Method of soldering end-eye plates to a steel wire heddle with a double wire so that the width of the end-eye plate corresponds to the width of the double wire. (784)

Knitting C3

SUCTION MEANS FOR REMOVING FLUFF OR LINT FROM KNITTING MACHINES. S. C. Savage (to Mellor Bromley & Co. Ltd). BP 842 174, July 20, 1960. Summary in BCIRA 40: 4278 (1960). (785)

NEEDLE SELECTION MEANS FOR CIRCULAR JACQUARD KNITTING MACHINES. F. C. Wiesinger (to Wildman Jacquard Co.). USP Reissue 24 912, Dec. 20, 1960. Original No. 2 814 937, Dec. 3, 1957. (786)

KNITTED FABRICS. F. C. Brown (to Brit. Celanese Ltd). BP 844 368, Aug. 10, 1960. Through BCIRA 40: 4284 (1960).
Crepe-like fabric is warp-knitted from a composite yarn containing continuous filaments of different degrees of recoverable elasticity, one complete, the other partial. The yarn is wound into a package under such tension that both types are extended, the one recoverably and the other permanently. (787)

JACK SELECTION ARRANGEMENT ON CIRCULAR HOSIERY MACHINES FOR OVERALL PATTERNING WITHOUT PATTERN-BREAKS. K. C. Williams (to Textile Mach. Works). USP 2 962 881, Dec. 6, 1960. (788)

CIRCULAR HOSIERY MACHINES. M. L. Shipwash and J. A. Summers. USP 2 962 882, Dec. 6, 1960.
Means for stabilizing the needle cylinder in its proper operating positions to assure uniform stitches and thus uniform size and shape. (789)

WARP KNITTING GUIDE. S. Dolinsky. USP 2 962 883, Dec. 6, 1960.
The yarn guides are provided with replaceable eye tips which interlock with permanent guide shanks, making it possible to remove or replace damaged tips without disturbing the alignment of the guide assembly. (790)

SEAMLESS KNIT TWO-LEGGED GARMENT BLANK. L. W. Garrou and G. F. Squillario (to Pilot Research Corp.). USP 2 962 884, Dec. 6, 1960. (791)

STITCH LENGTH CONTROL MECHANISM FOR CIRCULAR HOSIERY MACHINE. A. E. Page and H. L. Curtis (to Scott & Williams). USP 2 963 887, Dec. 13, 1960.
Means associated with each yarn feed point for sensing the size of stitches and for controlling relationships of the needles and cooperating elements for separately controlling the size of stitches formed at each of the feed points. (792)

NEEDLE IDLING MECHANISM IN A HAND KNITTING MACHINE FOR MECHANICALLY KNITTING FIGURED FABRICS. T. Suzuki and I. Suzuki (to ARS Amiki Seisaku KK). USP 2 963 888, Dec. 13, 1960. (793)

YARN FEED FOR HAND KNITTING MACHINE. T. Suzuki and I. Suzuki (to ARS Amiki Seisaku KK). USP 2 963 889, Dec. 13, 1960.
So that two kinds of yarn may be knitted one after another without removing or adding yarns during knitting. (794)

ELECTRICAL STOP MOTION FOR CIRCULAR KNITTING MACHINES. J. M. Hoots. USP 2 963 890, Dec. 13, 1960.
The detector, which forms an integral part of the electrical circuit of the stop motion, will immediately actuate the stop motion when engaged by an improperly functioning part. (795)

HOSIERY INSPECTING AND STACKING DEVICE. R. E. Fuqua (to Marvel Specialty Co.). USP 2 964 221, Dec. 13, 1960.
The mechanical stacking device is operated pneumatically from the pressure source used to induce a flow of air through the inspection part of the device. (796)

FINE DENIER YARN TENSION DEVICE FOR CIRCULAR HOSIERY MACHINES. R. Peel (to Singer-Fidelity, Inc.). USP 2 964 259, Dec. 13, 1960.
The device affords well controlled tension within a range of 1 to 5 g and exhibits a relatively high degree of automatic compensation for momentary fluctuations in tension arising from variable yarn feed conditions. (797)

APPARATUS FOR CONTROLLING TWISTED YARN IN KNITTING. S. J. Hoekstra (to Am. Enka Corp.). USP 2 965 330, Dec. 20, 1960.
Tension device for prevention of kinking during the idle portion of intermittent unwinding of highly twisted yarn over an end of a yarn holder. (798)

Fabrics C4

DEVICE FOR SPRINKLING POWDERED RESIN ON A CARD WEB. K. Georgi, W. Barthel, and J. Liebold (to VEB Zentrale Entwicklung und Konstruktion für den Kraftfahrzeugbau). BP 841 762, July 20, 1960. Summary in BCIRA 40: 4330 (1960). (799)

STAPLE FIBER BATT. A. S. Bell, L. Krause, and G. Hammerschmidt (to Brit. Celanese Ltd). BP 841 768, July 20, 1960. Through BCIRA 40: 4333 (1960).
To reduce the tendency of fibers to stray from the surface of a batt of staple fiber the non-compressed batting is sprayed with an aqueous dispersion of polyvinyl acetate or similar ethylenic polymer. (800)

WOVEN VENETIAN BLIND LADDER WEBBING. M. Stephenson (to T. French & Sons Ltd). BP 842 599, July 27, 1960. Through BCIRA 40: 4281 (1960).
The body warp ends are shed in twill and the cross strap ends in double-end plain weave. (801)

FIBER WEBS. I. S. Ness and R. V. Lints. BP 843 041, Aug. 4, 1960. Through BCIRA 40: 4226 (1960).
Means for reorientating the fibers in a web in which they lie predominantly in one direction. (802)

WOVEN HOSE. Lewis & Tylor Ltd. BP 843 263, Aug. 4, 1960. Through BCIRA 40: 4282 (1960).
The hose is lined with a lightweight fabric which is coated with rubber on the face that sticks to the hose and with a flexible plastic (e.g. polyvinyl chloride) on the face that becomes the inner surface of the hose. (803)

IMPREGNATING APPARATUS. Lantor Ltd (for West Point Mfg. Co.). BP 843 288, Aug. 4, 1960. Through BCIRA 40: 4329 (1960).
Apparatus for impregnating nonwoven fabric with binder. It comprises a roller at the bottom of an immersion tank and the claims are for a construction that permits removal of the roller through an opening in a side wall for frequent cleaning. (804)

BONDED FIBER MATERIAL. R. Pluháček and J. Trachta (Czechoslovakia). BP 843 612, Aug. 4, 1960. Through BCIRA 40: 4331 (1960).
Textile waste containing minute particles of rubber waste is mixed with a liquid or solid binding agent (e.g. a phenol/formaldehyde resin) and formed into plates or blocks at 150° C and under a pressure of 250–300 atm. (805)

APPARATUS FOR PRODUCING FIBER GLASS MATS. W. G. Cole (to Ferro Enamels Ltd). BP 843 997, Aug. 10, 1960. Summary in BCIRA 40: 4200 (1960). (806)

APPARATUS FOR THE CONTINUOUS PRODUCTION OF FLEXIBLE NONWOVEN WEBS. N. Nebout (to Pneumatiques Dunlop SA). BP 844 536, Aug. 10, 1960. Through BCIRA 40: 4280 (1960).
The material (e.g. a sheet of parallel filaments that have been coated with an adhesive) is laid down on a mandrel, cut obliquely into strips and the strips are rolled up. (807)

APPARATUS FOR PRODUCING GLASS FIBER THERMAL INSULATING MATERIAL. S. Palmer (to Versil Ltd). USP 2 958 919, Nov. 8, 1960. (808)

TEXTURED WOVEN PLACEMAT OR RUNNER. L. Fischer and P. Merwitz (to Chicago Weaving Corp.). USP 2 958 923, Nov. 8, 1960.
Random textured mats having the characteristics of handmade or rough woven linens or shantungs are formed from weft strands of narrow, flattened plastic strands of irregular configuration and monofilament warp strands, each pick of weft being substantially wider than each pick of warp. (809)

NEEDLED FELT. J. F. Marshall (to Am. Felt Co.). USP 2 959 509, Nov. 8, 1960.
Felt prepared by needle punching a layer of nap-forming material on a layer of base fabric, sifting over the layers synthetic resin in powdered form, and heating to render the resin particles adhesive. (810)

RAYON SWAB. R. MacHenry (to Am. Viscose Corp.). USP 2 959 838, Nov. 15, 1960.
Rayon swab containing dispersed in it Vinyon fibers which are rendered adhesive under sterilizing conditions. (811)

WARP KNITTING MACHINE. R. S. MacCaffray, Jr. (to C. H. Masland & Sons). USP 2 959 947, Nov. 15, 1960.
Method of producing a cut or uncut pile carpet or a carpet having cut and uncut loops by a mere change of the pattern chain. (812)

FLOATING LOOP CUTTER FOR TUFTED FABRICS. J. L. Card. USP 2 960 748, Nov. 22, 1960.
Mechanism for cutting floating loops which have been woven parallel to the weft of the fabric. (813)

EMBOSSED PILE FABRICS. R. R. Matthews (to Firth Carpet Co.). USP 2 960 750, Nov. 22, 1960.
Pile surface in which a certain number of pile yarns consist of heat shrinkable fibers to form pile loops of greater density than that of the nonshrinkable pile loops to give an embossed or carved effect. (814)

ELASTIC WOVEN TUBE WITH STIFF FILLERS FOR LAMP SHADES, BASKETS, HAMPERS, ETC. J. Feliks (to Woven Arts, Inc.). USP 2 961 009, Nov. 22, 1960.
The tube consists of parallel stiff fillers, e.g. wood, plastic, glass fibers, or metal, woven in with non-elastic warp yarns and parallel spaced elastic warp yarns woven under tension, so that when the tension is released, the elastic yarns will contract to produce ribs. (815)

ELASTIC RAYON BRAID MADE OF BOTH DULL AND BRIGHT THREADS. M. Semmel (to Allied Elastic Braid Corp.). USP 2 960 904, Nov. 22, 1960.
To conceal the presence of dirt or lint caught during the braiding operation, strands with a bright finish are included with the usual dull diagonally braided strands. (816)

PILE CARPET YARN. C. C. Berry (to James Lees & Sons Co.). USP 2 961 010, Nov. 22, 1960.
Plied yarn that is variably twisted and subsequently backtwisted to produce a more uniform, unstreaked, random pile in Moresque type carpets. (817)

FIBER RUG WITH SCINTILLATING APPEARANCE. A. Brown (to Congoleum-Nairn Inc.). USP 2 961 011, Nov. 22, 1960.
The rug has its filling formed of paper yarns wound spirally with transparent or translucent bands of plastic. (818)

METHOD OF BONDING GLASS FIBER MATS. W. J. Dennis (to Fiberglas Canada Ltd). USP 2 961 361, Nov. 22, 1960. (819)

METHOD OF MAKING BONDED NONWOVEN PRODUCTS. A. L. Smith and W. R. Conn (to Rohm & Haas Co.). USP 2 961 364, Nov. 22, 1960. (820)

POLYETHYLENE TEREPHTHALATE LAMINATES. C. E. Sroog (to E. I. du Pont de Nemours & Co.). USP 2 961 365, Nov. 22, 1960.
Polyethylene terephthalate films or fabrics are laminated to a base material such as woven or nonwoven fabrics, paper, metal, wood, leather, rubber, etc., by means of a polyester adhesive. (821)

PROCESS AND APPARATUS FOR PRODUCING GLASS FIBER MATS. W. F. Rea (to Johns-Manville Fiber Glass Inc.). USP 2 961 698, Nov. 29, 1960. (822)

FLOAT CUTTING APPARATUS FOR TUFTED FABRICS. F. W. Riddle and S. L. Duffett (to Scotland Mills). USP 2 961 734, Nov. 29, 1960.
Tufted cord cutting apparatus for cutting randomly arranged or transverse rows of longitudinally extending tufted cords on a moving base fabric. (823)

MEANS FOR FORMING A SCULPTURED TUFTED FABRIC. J. H. Wear (to Russell-Lacey Mfg. Co.). USP 2 961 982, Nov. 29, 1960.
In the formation of tufted fabrics by the insertion of tuft loops in a base fabric by a reciprocating needle, the stroke of the needle is varied selectively in accordance with the different tuft heights desired. (824)

TUFTING MACHINE. T. M. Rhodes (to James Lees & Sons Co.). USP 2 961 983, Nov. 29, 1960.
Brush-type looper for gripping and holding the pile projections. (825)

INFRARED REFLECTING YARNS AND FABRICS. A. N. De Thier (England). USP 2 965 139, Dec. 20, 1960.
The fabrics are woven from spun yarns consisting of a blend of the primary colors of the spectrum (red, blue, and yellow or green) in such proportions as to give a reflectance of infrared rays approximating that of white. (826)

LAMINAR PADDING FOR UPHOLSTERY MATERIALS. D. F. Rosa (to Detroit Gasket & Mfg. Co.). USP 2 962 406, Nov. 29, 1960.
The padding consists of a layer of vinyl resin sponge material in which is partially embedded a second layer of a resilient, porous padding material in the form of fibers. (827)

FINISHING D

Chemical processes D1

ANTISTATIC DETERGENT COMPOSITIONS. K. A. Brunt and D. Williams (to Brit. Nylon Spinners Ltd). BP 839 407, June 29, 1960. Through BCIRA 40: 3845 (1960).
Detergents for nylon and the like that leave the material less prone to soiling by imparting an antistatic effect comprise a quaternary cationic surface active agent, soda, sodium perborate or sodium tri-polyphosphate, and an anionic surface active agent. (828)

ANTISTATIC FINISH. Farbwerke Hoechst AG. BP 839 456, June 29, 1960. Through BCIRA 40: 3813 (1960).
An antistatic dressing for materials of the polyamide and polyester series comprises (1) the sodium or ammonium salt of a copolymer of an $\alpha:\beta$-unsaturated dicarboxylic acid (e.g. maleic) and a vinyl compound (e.g. styrene) and (2) a polyglycol or a copolymer of ethylene oxide and other alkylene oxides. (829)

BLEACHING PROCESSES AND COMPOSITIONS. J. Agnew and F. R. M. McDonnell (to Unilever Ltd). BP 839 715, June 29, 1960. (Addition to BP 836 988). Through BCIRA 40: 3806 (1960).
The bleaching agent comprises hydrogen peroxide (as an alkali per-salt) and an ester of an arylcarboxylic acid (e.g. phenyl benzoate and a benzoylated phenolsulfonate), the amount of available oxygen being 4-20 atoms for each mol. of ester. (830)

ANTISTATIC FINISH. Boehme Fettchemie GmbH. BP 839 891, June 29, 1960. Through BCIRA 40: 3814 (1960).
Polyamide staple fiber, yarns, and fabrics are squeezed out with caustic soda and then left in a solution of a lactone, lactam (especially caprolactam), or sultone (e.g. propane-sultone) until the increase in weight of the textile is not more than 3% (practically nil) but its electrical resistance is very much reduced. (831)

APPARATUS FOR COATING GLASS FIBERS. J. W. Case. USP 2 954 582, Oct. 4, 1960.
An intimate bond between fibers and coating material is achieved by the application of the coating to glass filaments in their nascent state as extracted from a glass furnace. (832)

INDUCING DURABLE CREASES INTO CREASEPROOFED CELLULOSE FABRICS. G. S. Buck, Jr. and N. F. Getchell (to Nat. Cotton Coun. of America). USP 2 957 746, Oct. 25, 1960.
The wrinkle-resistant fabrics are treated with an acid solution to destroy the wrinkle resistance in the wetted area, folding the fabric along the wetted area to form a fold, and applying heat and pressure along the fold until the wetted area is dry and the chemical bonds between the cellulose and the resin with which it was initially treated are reformed. (833)

MODIFICATION OF WOOL FIBERS WITH SULFONES AND RELATED COMPOUNDS. J. E. Moore (to U. S. Secy. Agri.). USP 2 955 016, Oct. 4, 1960.
Wool and other keratin fibers are chemically modified by initially reacting them with a sulfur-containing, reducing, disulfide-splitting agent and reacting the reduced fiber with an unsaturated sulfone, sulfoxide, or phosphine oxide. (834)

PEROXIDE-ESTER BLEACHING COMPOSITIONS. T. D. Davies, G. C. Hampson, F. R. M. McDonnell, and G. Schmerlaib (to Lever Bros. Co.). USP 2 955 905, Oct. 11, 1960.
Aqueous solutions containing hydrogen peroxide and an organic carboxylic ester are claimed. (835)

FIRE RESISTANT GLASS FABRICS. F. L. Fasano (to E. I. du Pont de Nemours & Co.). USP 2 956 917, Oct. 18, 1960.
Fire resistant coating is applied to loosely woven glass fabrics without distorting or weakening the fabric by impregnating the fabric with a solution of a polyalkyl methacrylate and a polyvinyl resin and laminating a preformed vinyl resin film onto the treated fabric by means of pressure. (836)

POLYESTER-URETHANES DERIVED FROM CYCLOHEXANEDIMETHANOL AND TEXTILE FABRICS COATED THEREWITH. C. J. Kibler, A. Bell, and J. G. Smith (to Eastman Kodak Co.). USP 2 956 961, Oct. 18, 1960.
The polyester urethanes claimed are applied to the fabric in a benzene solution and then cured. (837)

SIZING AGENT FOR GLASS FIBER YARNS. A. Marzocchi and M. R. Alexander (to Owens-Corning Fiberglas Corp.). USP 2 958 114, Nov. 1, 1960.
Oil-in-water emulsion composed of an oil modified alkyd resin, an unpolymerized epoxy resin, stearato chromic chloride, gelatin, and a glass fiber lubricant is claimed. (838)

SHRINKPROOFING WOOL BY MECHANICAL TREATMENT. T. J. Coe (to U.S. Secy. Agri.). USP 2 958 910, Nov. 8, 1960.
The wool fibers are carded with card wires provided with finely pitted surfaces to selectively engage the scale formations and effect descaling without excessive fiber damage. (839)

DEVICE FOR THE REMOVAL OF LIQUIDS ADHERING TO RUNNING TEXTILE THREADS. A. Doll (to J. P. Bemberg AG). USP 2 960 777, Nov. 22, 1960.
The yarns are mechanically vibrated by means of an electric field. (840)

VINYL RESIN COATED SYNTHETIC FABRICS. E. C. Atwell (to Burlington Inds.). USP 2 961 343, Nov. 22, 1960.
Composition for use as a bonding agent between synthetic fibers, e.g. nylon, Dacron, Orlon, or Acrilan, and polyvinyl resin coating consists of resorcinol, resorcinol-formaldehyde condensate, and a polyvinyl chlorite or vinyl chloride-vinyl acetate copolymer in an aqueous dispersion. (841)

COATINGS OF CHLORINATED POLYETHYLENE ON TEXTILES BY FLAME SPRAYING. H. Noeske, F. Gross, and W. Borns (to Ruhrchemie AG). USP 2 962 387, Nov. 29, 1960. (842)

FABRIC WET PROCESSING MACHINE. J. H. Shelton. USP 2 960 963, Nov. 22, 1960.
The immersion or impregnation tanks are arranged in tandem to facilitate the continuous movement of the materials through the processing line. (843)

WATERPROOFING AND SHRINKPROOFING PROCESS FOR WOOL. E. Robbart. USP 2 961 338, Nov. 22, 1960.
The moisture content of the wool is reduced to below 10% of its dry weight and exposed to the vapors of an organo silicon halide. (844)

PREVENTING SHRINKAGE AND FELTING OF WOOL. J. D. Floyd (to Hercules Powder Co.). USP 2 961 347, Nov. 22, 1960.
The wool is treated with certain water-soluble cationic thermosetting polyamide-epichlorohydrin resins. (845)

DELUSTERING PROCESS. P. H. Haycock, J. J. Ryan, and M. Tuson (to Tootal Broadhurst Lee Co. Ltd). USP 2 962 392, Nov. 29, 1960.
Improved method for liberating acid in aqueous solutions containing an amino-aldehyde condensate to precipitate the condensate in particulate form. (846)

Dyeing and printing D2

CARRIER FOR DISPERSE DYES. L. A. Bashford (to Courtaulds Ltd). BP 839 707, June 29, 1960. Through BCIRA 40: 3807 (1960).
The carrier comprises a mixture of a soap, an alcohol of b.p. above 75° C (e.g. isopropyl or tert.-butyl alcohol) and dimethylcyclohexylphenol, octylphenol, or a similar substituted phenol. (847)

PIGMENT COMPOSITIONS. H. J. Twitchett and A. S. Wild (to Imp. Chem. Inds. Ltd). BP 839 712, June 29, 1960. Through BCIRA 40: 3810 (1960).
Colored or fluorescent pigments are milled with an aqueous paste of a synthetic polyamide. The products are used for coating paper or fabrics. (848)

VAT DYEING OF ACRYLIC FIBERS. H. R. Mautner (to Gen. Aniline & Film Corp.). USP 2 955 008, Oct. 4, 1960.
Dye baths containing an ester salt of a leuco vat dye, polyvinyl lactam, and sodium formaldehyde sulfoxylate produce uniform dyeings of good washfastness. The polyvinyl lactam acts as dispersing agent and as a retarding agent to lower the rate of exhaustion. (849)

DYEING POLYETHYLENE TEREPHTHALATES WITH MONOAZO DYES. W. Kruckenberg (to Farbenfabriken Bayer AG). USP 2 955 901, Oct. 11, 1960. (850)

SCREEN PRINTING MACHINES. C. Masson (France). USP 2 959 122, Nov. 8, 1960.
The fabric to be printed is laid on an endless band arranged to slide on a table. (851)

METHOD OF TREATING WOVEN GLASS FABRICS TO IMPROVE DYEABILITY. I. S. Hurd and G. M. Haynes (to Moretex Chem. Prods. Inc.). USP 2 961 344, Nov. 22, 1960.
The fabric is padded with an aqueous solution of a water soluble salt of a partially deacetylated chitin to improve its dye receptivity. (852)

FUGITIVE TINTS FOR NATURAL AND SYNTHETIC FIBERS. E. A. Murray. USP 2 959 461, Nov. 8, 1960.
Tint formulation consisting of a colored water-soluble metal chelate and a polyvinyl lactam is claimed. (853)

BLANKET PRINTING APPARATUS. L. E. Mull. USP 2 960 028, Nov. 15, 1960.
Which permits imprinting both sides of a strip before washing and drying. (854)

CARRIER FOR DISPERSE DYES. L. A. Bashford (to Courtaulds Ltd). USP 2 960 381, Nov. 15, 1960.
Carrier composition which can be quickly stirred into hot water to produce a stable and even dispersion consists of a mixture of soap, a water miscible alcohol, and a substituted phenol carrier. (855)

DYEING OF CELLULOSE FIBER BLENDS. W. A. Schoeneberg and P. A. Studer (to Celanese Corp.). USP 2 961 288, Nov. 22, 1960.
Blends of cellulose acetate with cellulose esters of low hydroxyl content are dyed by padding an aqueous dispersion of a vat pigment on the fabric to cause it to penetrate the cellulose acetate, reducing the remaining vat pigment on the cellulose fibers to its leuco form, and oxidizing. (856)

RETARDING AND LEVELING AGENTS FOR DYEING ACRYLIC FIBERS WITH BASIC DYES. R. C. Keller (to Sandoz Ltd). USP 2 963 339, Dec. 6, 1960. (857)

YARN SKEIN DYEING APPARATUS. L. L. Walmsley (to Am. Viscose Corp.). USP 2 963 894, Dec. 13, 1960.
An impermeable or nonabsorbent, flexible sleeve is positioned over the exterior of yarn skeins looped about a perforated pipe through which the dye liquor is forced under pressure. (858)

SCREEN PRINTING MACHINE. P. Zimmer (to Zimmer's Successors Co.). USP 2 965 020, Dec. 20, 1960.
The doctor roller is supported by a recess of nearly circular cross section, open on the side facing the printing screen. (859)

Mechanical processes D3

HOLLOW PRESSURE ROLLS. Gebrüder Sucker GmbH. BP 841 827, July 20, 1960. Summary in BCIRA 40: 4270 (1960).
Means for securing a uniform nip between a pair of hollow pressure rollers (for groups of yarns or webs) when the pressure is applied to their bearing journals. (860)

HEAT SETTING APPARATUS FOR CONTINUOUSLY MOVING YARNS. NV Onderzoekingsinst. Research. BP 843 905, Aug. 10, 1960. Through BCIRA 40: 4242 (1960).
The tendency of the yarns to stick is overcome by temporarily cooling the surface until the yarn is moving in proper contact with the surface. (861)

MACHINE FOR FEEDING A CONTINUOUS STRIP OF MATERIAL TO A CUTTING DEVICE. H. G. M. Dicker (to Kunstzijdespinnerij Nyma NV). USP 2 958 451, Nov. 1, 1960. (862)

Drying, setting, conditioning D4

PERFORATED DRUM DRYER. E. Kiefer and W. Schmolz (Germany). USP 2 964 854, Dec. 20, 1960.
Improved control of air currents is claimed by the use of fans, mounted inside the perforated drums, which draw the drying air away from the surface on which the textile material lies to the opposite section of the drum surface. (863)

TESTING AND MEASUREMENT E

Fibers E1

METHOD OF MOUNTING FIBER SAMPLES FOR CROSS SECTIONING. J. E. Dereich (to Diamond Alkali Co.). USP 2 964 443, Dec. 13, 1960.
The sample is placed between two pieces of clear vinyl plastic which are subjected to sufficient heat and pressure to cause the plastic pieces to fuse together before the plastic is absorbed by the fiber. The fiber thus embedded is accessible for subsequent dyeing. (864)

Yarns E2

PHOTOELECTRIC DEVICE FOR EXAMINING AND REGISTERING THE REGULARITY OF A RUNNING, BULKED YARN. NV Onderzoekingsinst. Research. BP 842 223, July 20, 1960. Summary in BCIRA 40: 4249 (1960). (865)

APPARATUS FOR MEASURING THE FRICTIONAL PROPERTIES OF YARNS. T. S. Nutting and T. K. Morley (to Hosiery & Allied Trades Research Assoc.). BP 842 919, July 27, 1960. Summary in BCIRA 40: 4369 (1960). (866)

DEVICES FOR TESTING FILAMENTARY STRUCTURES. E. J. R. Hewitt and T. Shaw (to Brit. Nylon Spinners Ltd). BP 843 623, Aug. 4, 1960. Through BCIRA 40: 4180 (1960).
The invention relates to an instrument of the capacity and dielectric gap type for measuring and/or recording the variability in cross-section of a running yarn, e.g. of nylon. (867)

Fabrics E3

ROTATING MIRROR MEANS FOR OBSERVING MOVING FABRICS WITH REPEAT PATTERNS. J. M. Strang and I. H. Mackenzie (to Barr & Stroud Ltd). USP 2 958 256, Nov. 1, 1960. (868)

MILL MANAGEMENT F

Plant and equipment F2

CLOTH ENGAGING ROLLS. J. D. Robertson (to Mount Hope Machy. Co.). USP 2 960 753, Nov. 22, 1960.
The surface of the roll is made up of helically wound, soluble strip material which may be wound on the roll with simultaneous application of a solvent to achieve a uniform covering which becomes stable and wear resistant upon evaporation of the solvent. (869)